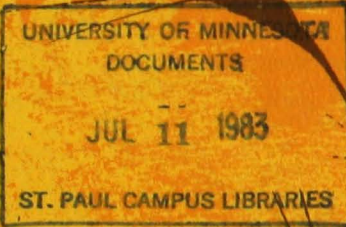


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# **Natural, organic, and health foods**

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The demand for natural foods in the United States has caused a dramatic rise in the number of health/natural food stores. In 1968 there were about 1200 stores; in 1978 there were over 6600 stores. It is reported that the total sales increased from \$170 million in 1970 to \$1.6 billion in 1978 and are projected to reach \$3 billion by 1990. The 6600 health/natural food stores account for four percent of the grocery stores in 1978.

In addition to health/natural food stores, many supermarkets include nutrition centers. The Food Marketing Institute estimates that supermarket sales of health and natural foods will grow to five billion dollars in 1985. Another indication of the growing interest in nutrition is the food processors who are striving to improve the nutritional value of the brandname products by lowering the salt and sugar content.

Some restaurants have expanded their menus to include a variety of salads, soups, and whole grain breads, reflecting the interest in natural health foods. Chicken and fish are featured and smaller servings are being offered to reduce the calorie and/or fat content of entrees.

### **Why the interest in natural, organic and health foods?**

Many factors have contributed to the wide-spread desire for natural, organic or health foods. An increased interest in wellness or personal responsibility for good health brings eating habits and nutrition into the spotlight. Individuals want to reduce their chances of diseases, such as cardiovascular disease or cancer. They want foods that contain a maximum amount of nutrients for the calories. There is concern about the nutrient content of highly processed foods, the use of additives and pesticides and drug residues. For other people it is a matter of conserving energy and other resources, and they want to obtain nourishing foods from sources that use a minimal amount of transportation, advertising, and packaging resources. Food cooperatives and direct marketing by farmers has increased the availability of unprocessed foods.

While there is a growing awareness of nutrition and concern about the quality of food and health, many people do not have a working knowledge of sources of nutrients in their food. For example, the apple has been traditionally associated with good health. However it is not a good source of any nutrients.

Potato chips which are often maligned for their salt and fat, contain twice as much protein, about the same amount of thiamin and riboflavin and more niacin per calorie than an apple. Another interesting comparison is between two popular foods: Quiche Lorraine and a hot dog on a bun. Many folks may identify quiche as a more nourishing food because it is associated with many natural food restaurants. However, in these days of watching calories and fat it may not be the wiser choice. Quiche Lorraine (one sixth of nine inch pie) contains twice the calories, three times the fat, and almost the same amount of sodium as a hot dog and bun.

Granted, there are more issues to be dealt with than fat and sodium. Nitrates for example. There are risks and benefits to be considered with all of our choices. It is impossible to formulate a simple recommendation to insure the right foods for each person.

However, the major nutrition problems in this country can be corrected without so-called natural, organic or health foods. For many people nutritional health can be improved by eating less fat, sugar, and salt, and increasing complex carbohydrates in the diet. Proper body weight for height and physical fitness are important for good health. Food selection that is based on moderate amounts of a variety of nourishing foods is essential.

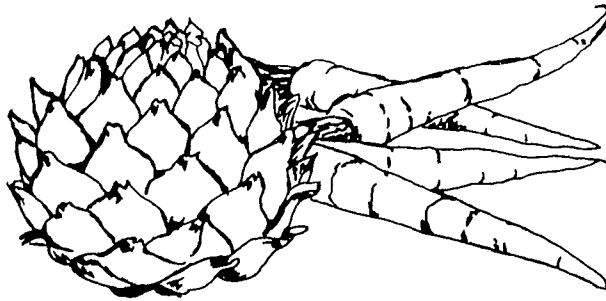
### **What is meant by natural?**

The term natural has been used to mean many diverse and inconsistent things. It has been added to the labels of some familiar unchanged products just to call attention to the item. Even when the word natural is not used, a lot of labels or commercials call to mind the back-to-nature good-old-days when a mythical mother figure took care of everyone with comforting love and food.

In 1978 the Federal Trade Commission proposed the following definition of natural for label claims but it was killed in 1982. The proposal recommended that the products meet the following two criteria: 1) The product does not contain any artificial flavor or flavoring, coloring ingredient, or chemical preservative, or any other artificial or synthetic ingredient; and 2) the product and its ingredients are not more than minimally processed (includes cutting, grinding, or other procedures which change the form of the food to make it safe, edible or to preserve it). Even though the proposal was rejected by the FTC, the Department of Agriculture's Food Safety and Inspection Service has officially adopted it for label claims on meat and poultry products.

Since this definition of the word natural was recommended there were many discussions, different groups and government agencies disagreed on its interpretation. Some felt that the government should not define the word; others felt that standards must be defined in order to reflect most consumers' expectations. In 1974 it was suggested that natural should be banned from advertising claims. There is a lot of confusion regarding the word, and if industry uses the term irresponsibly, government will have to regulate its use.

The term natural may mislead consumers who believe that foods so labeled are intrinsically safer or nutritionally superior to their "unnatural" counterparts. When considering the question of food safety, it is important to pay attention to the health or safety risks associated with those toxins occurring naturally in foods as well as food additives. Toxicants occur naturally in



foods such as mushrooms, almonds, and spinach. Peach pits can be poisonous if consumed in large quantities. Concentration rather than mere presence of a substance is responsible for the toxic properties of many foods. For example, amyloacetate is a paint solvent, yet the chemical, in much smaller amounts is partly responsible for the natural flavor of bananas.

There are potential problems that need scientific investigation and public health education. Better understanding of the interactions and reactions of the substances in our food—whether they are nutrients, additives, or toxins—may help solve some of the chronic disease problems.

Some people relate natural foods to a cycle of returning the organic waste materials of plant and animal life to the soil so that they can decompose and then be returned to man in the form of plant and animal food. Although this may sound like a safe, enclosed environment, there is nothing intrinsically safe about nature.

There are many unknowns about the chemical make-up of our natural food resources. The plants and animals that we use for food are a mixture of compounds appropriate to the functioning or propagation of that species. They do not reflect a sacred natural design for human nutrition.

### **What are organic foods?**

There is no legal definition for organic foods. Producers, manufacturers, and retailers may use the term loosely in advertising and labeling these foods. Consumers expect organic foods to be grown without commercial fertilizers and pesticides and to be free of additives, hormones, and antibiotics. Organic growers or farmers have done some self-monitoring and developed certification criteria. However it is often said that more organic food is sold than is grown.

Organically grown foods refers primarily to the way certain foods are raised, since all food could be organic in the chemical sense. The plowing, irrigation, insect and pest control, and fertilizing methods used in raising organic food take advantage of natural relationships between organisms and their environments. Soil deficiencies are corrected by using decaying natural matter and so-called nonorganic fertilizers like limestone, granite and rock phosphate. No commercial pesticides or fertilizers are used.

Large amounts of organic materials can improve the physical properties of soil by increasing soil aeration and the development of soil organisms. Most soils would be more productive if organic matter could be added to them. There is no evidence that organic matter is a cure-all and will result in an increased quality of produce. Soils which are classified as peat or muck have high organic matter contents, but they do not produce the best quality crops because they are low in mineral elements. Many manures, often low in phosphorus, are an unbalanced source of plant nutrients.

To understand how a plant uses organic or commercial fertilizers, we need to know how it takes simple substances from the soil. Manure and compost must be broken down by bacteria into chemicals before they can be absorbed by the plant's root system. Commercially produced fertilizers provide the same minerals and nitrogen compounds as do organic fertilizers. When soil conditions and weather are optimum, the conversion of organic nutrients to inorganic nutrients by microorganisms in the soil is rapid.

Plants require sixteen elements for growth. They are taken into the plant in an inorganic form. These elements are:

- |            |            |
|------------|------------|
| Carbon     | Manganese  |
| Hydrogen   | Copper     |
| Oxygen     | Zinc       |
| Nitrogen   | Molybdenum |
| Phosphorus | Boron      |
| Calcium    | Chlorine   |
| Magnesium  | Iron       |
| Sulfur     | Potassium  |



The mineral composition of the plant is the net result of the plant taking up these elements from the air, water and soil through its leaves and roots. If any of these elements is lacking or if it is present in improper proportions, normal plant growth will not occur. These elements can be in short supply in a soil high in organic matter as well as a soil low in organic matter.

Contrary to some claims, organic methods do not guarantee improved nutritional composition of crops. Fertilizer, organic or otherwise, can improve the nutritive value and vigor of a plant if the soil is deficient in nutrients. Soil testing is important so you can determine which nutrient is in short supply and then add it to soil. The protein content of grain can be increased with nitrogen from either fertilizers or manure. However, while the major result of adequate fertilization is to increase the size or yield of the crops, it does not greatly affect the nutritional value of the plant.

A study by scientists of the United States Plant, Soil and Nutrition Laboratory at Ithaca, New York shows that vitamin C and carotene (a precursor of vitamin A) content of seeding rye in plots receiving large quantities of manure over a 25 year period was the same as that of the rye from plots fertilized with chemical fertilizer for the same period. Similarly, the vitamin C, iron, and copper content was the same for potatoes grown in manured soil or in chemically treated soil.

Comments that depleted soil has created human nutritional deficiencies are unfounded. The only known example of a relationship between soil and human nutritional deficiency is endemic goiter. Because iodine is needed to prevent endemic goiter but is not needed by plants, goiters are avoided by using iodized salt. It is not necessary to add iodine to the soil.

A plant's nutrient content depends primarily on its genes. Just as plants vary in their insect and disease resistance, the vitamin or protein content of a food, such as a carrot or orange, can vary with the plant's genetic nature. Through breeding, strains of corn with a higher lysine (an amino acid) content have been developed, improving the quality of corn protein. Efforts to obtain redder tomatoes have decreased the beta-carotene content (vitamin A precursor). Many crops could be genetically improved to increase their nutrient content, but some people would argue whether this is necessary.

Other factors affecting a plant's nutrient content are the amount of sunlight it receives and how it is handled and stored.

Raising your own food is an economical way to get fresh, tasty fruits and vegetables as well as exercise and recreation. But we cannot rely on using organic methods in small gardens to feed the populations in our metropolitan areas. There is not enough organic compost and manure to go around. Oriental countries devoted their resources to organic cultivation and agriculture to such a degree that forests and wildlife shelters have been destroyed and the hill country has eroded because the land has been stripped of its organic or compost materials.

American food producers are vulnerable to weather and disease in plant and animal life. Eliminating the use of chemical fertilizers, antibiotics, food additives, and preservatives probably could mean less or more expensive food rather than better health.



## What are health foods?

The Federal Trade Commission has recommended that the use of the term health food be prohibited because it cannot be defined or qualified in a meaningful way. Sometimes advertisers claim that certain foods can prevent or cure a disease, maintain youthful vigor, or give superior health. Actually all foods are "health" foods, each supplying varying amounts of nutrients needed by humans. Health foods offer the same nutritive qualities expected in any wholesome food product. It is the unproven health claims made for these foods that are questionable, not the foods themselves.

It is interesting to note that the health claims are found in magazines and pamphlets or given verbally on television or by store clerks. Rarely are they found on the labels, thus avoiding prosecution from the Food and Drug Administration. Clerks in natural/health food stores frequently act as health advisors even though they do not have degrees from accredited colleges or universities. Customers ask for advice, and they are told what they want to hear by friendly caring employees, whether it is based in scientific research or not. Word-of-mouth or personal experience is very powerful when it comes to influencing a person's decision at the point of the purchase.

People often turn to health foods or supplements for relief from pain or because they are anxious about their body functions. They may think that food can be used to cure a disease or they don't want to take medications. Some people who buy health foods hope to prevent diseases. The big problem is, at whose expense? More often than not the individuals who profit are the proprietors of health foods, not the customer.

The relationship between diet and chronic diseases needs much more research. For example, the relationship between fat in the diet and heart disease or bulk in the diet and cancer of the bowel are not agreed upon by leading nutritionists. Much has to be learned about the long-term effects of diet on health.

Most foods contribute to our nutritional health. Some are regarded as good sources of vitamins, some are good sources of minerals, others contribute protein. If you select a variety of foods in moderation, a balance of vitamins, minerals, and protein will be supplied for good nutritional health.

## **What about the use of pesticides?**

Many people do not understand that there is a difference between indiscriminate pesticide use and controlled application. Safe use of the proper pesticide is a must whether gardening or farming. Proper applications of pesticides can mean that chemicals will disintegrate to harmless compounds before the crop is harvested. The chemicals also need to be used far enough ahead of harvest so that disintegration is complete.

At this time the known health risks from being overweight or from bacterial contamination of food are greater than the risks from consuming pesticide residues or food additives.

## **What about food additives?**

Since the beginning of time, man has had to devise ways to preserve his food before it is spoiled. Drying, fermentation, or using salt-brine or sugar syrup have been used to preserve food. Today consumers demand a product that will have the same quality time after time. Older preservation methods often do not maintain constant quality. Therefore, man devised new methods to preserve food, many of which require food additives.

The food industry uses additives to maintain flavor, texture, or color, to block oxidation or rancidity, to prevent emulsion breakage, to add nutrients to foods, or to inhibit mold. Other tools of the food industry are heat and sterilization (canning), refrigeration, freezing, and drying. These methods do not require the use of additives.

Another way to look at some additives is that they are ingredients in a product. The two additives or ingredients that are consumed in the largest amounts are sugar and salt. Baking powder and soda are listed frequently. As well as listing the ingredients, some labels will describe the functions of the additives.

Preservatives, one category of food additives, have the important function of reducing food spoilage and waste. They retard staleness, reduce the growth of yeasts, molds, and bacteria, and prevent rancidity. Some people want to avoid preservatives and frequently labels point out that they have not been used. In the long run this may contribute to food waste, over-all increased food costs, and have been a questionable benefit in reducing health risks.

The 1958 Food Additives Amendment to the Federal Food, Drug, and Cosmetic Act created a category of substances "generally recognized as safe," called the GRAS list. The Food and Drug Administration (FDA) evaluated this list of substances and other regulated food additives. In 1980 a group of scientists reviewed the research on many of the substances on the GRAS list. They found that there is adequate knowledge about seventy three percent of the chemicals and they are considered safe. For sixteen percent it was said that they were probably safe but more information is needed. This list includes sucrose (table sugar) and corn sugar. A small group of nineteen chemicals (five percent) were described as needing additional studies because of uncertainties. BHT, caffeine, and nutmeg are in this category. Salt and flour modified starches were described as warranting restriction as currently used. And there were eighteen additives (four percent) on the GRAS list for which there were inadequate data to make a recommendation. This included waxes used on produce.

For any new food additive to be approved, its use must be justified and safe, and the amounts must be correct to fulfill a need. Testing involves feeding different levels of the additive to two or more species of animals. The cost of these feeding studies are passed on to the consumer.

### **What are enriched foods?**

Enrichment means that some of the nutrients that have been removed in the processing of food are returned. When wheat flour is milled, the wheat berry is broken into three sections: (a) the bran, husk, or outer skin; (b) the endosperm or the main part of the berry consisting of starch and protein, and (c) the germ, embryo, or the part of the berry which starts new life. White flour is largely the endosperm of wheat. Because the bran and germ which contain nutrients are not used in white flour, thiamin, niacin, riboflavin and iron are added to white flour to enrich it or to restore its nutrient content to a level similar to whole wheat flour. Whole wheat flour contains many micro-nutrients that are not available in enriched white flour.

During World War II enrichment was federally controlled. After the war, states could choose whether they wanted an enrichment law. Because many millers participate in interstate trade, they enrich the white flour. Use of enriched flour in commercially baked sweet rolls, cookies, and cakes, and in packaged mixes has been limited until the recent interest in the nutritional quality of these products. "Enrichment" of flour, bread, rice, cereal, spaghetti, and macaroni products refers to the addition of the B vitamins (thiamine, riboflavin, and niacin) and the mineral iron.

It is sometimes said that the vitamins used in enriched or fortified foods are worthless. However, the difference between the molecule of the vitamins from laboratory sources (synthetic) or natural sources are insignificant to the body. The vitamins and minerals used in enriching bread and flour are in forms used by the body.

There are also several classes of fortified foods to which specified amounts of certain vitamins and minerals may be added. The FDA has designated the following food classes for fortification: processed cereal, fruit juices and fruit drinks, infant formulas-infant food products, alimentary pastes, whole fluid and powdered milk for drinking, fluid skim milk and fluid low-fat milk for drinking, and salt. The nutrients are added to carefully selected staples in the American diet in order to improve public health.

Nutritionists do not always agree about the value of adding nutrients to staple foods. For example, some nutritionists question adding vitamin B<sub>12</sub> to cereals because it is not found in plant products and there is no evidence of a shortage of it in the average diet. Nutritionists also are concerned about the prevalence of anemia among young women, children, and senior citizens, indicating a need for more iron. The amount and the form of iron salt to be used in the enrichment of breads, flours, and cereals is debated.

Basically there are two thoughts about enrichment. One is that government and industry should provide nourishment by enriching and fortifying various staples. This is especially important when it is not possible for people to buy a variety of foods. On the other hand, when a variety of food is available and people intelligently select and eat nourishing food, it is not necessary to add a lot of nutrients to staples. Both a nutrition education program and en-

richment of food staples are important to meet people's varying lifestyles and food choices.

### **Why is the vitamin supplement business so big if our food is nourishing?**

The appeal for vitamin and mineral supplements, organic or synthesized, is largely based on the argument that a person might have a deficiency that doctors cannot detect. The sales pitch leads to much self-prescription. Advertisements for supplements suggest that if you are concerned about your health, you will take vitamin pills, or that you cannot possibly have the information you need to select nutritious foods or the time you need to prepare them. So, the only way to be well nourished is to take pills.

The vitamin and food supplement industry is growing fast. A report for the pharmaceutical industry indicates that the vitamin and mineral business will have a volume of 3.5 billion dollars by 1988 from an estimated 500 million in 1972. The largest retailer expects a thirteen percent growth from 1981 to 1982. For some people nutrition means taking vitamin pills and supplements; they do not think of food as being a source of nutrients. Other people view vitamin pills and supplements as a substitute for medicines. This may be of little consequence when people take vitamin C for colds, but it is a very dangerous, life threatening idea if a person is taking medication for heart disease or high blood pressure.

The use of self-prescribed food supplements to prevent colds and other illnesses, provide energy, and supplement an inadequate diet is commonly observed. In a survey of 2451 adults in the western United States, two-thirds used food supplements. They are often promoted in association with stress or helping people to cope with the pressure of life or even depression. Although nutrients contribute to a healthy nervous system, and stress alters nutritional processes, there is no evidence of any special supplements or vitamins that will increase one's ability to handle stress. Again, moderate regular meals selected from a variety of nourishing foods are the best approach.

It is possible to take toxic amounts of vitamins, especially vitamins A and D which are stored in the body. Usually this happens when a person takes excessive numbers of pills or drops each day. The symptoms of toxicity from too much vitamin A or D are strikingly similar to the deficiency symptoms.



If you decide to use vitamin pills without consulting a physician, remember that some contain nutrients out of proportion to the body's needs, or contain nutrients that the body can make itself or that are generously supplied in foods. While nutritional research has some answers about deficiency diseases, there is much less knowledge about the results of taking megadoses of a nutrient and the imbalances that may be created.

### **When you buy food, consider the following:**

- If you are sincere about avoiding pesticides, insist on knowing the origin of the food that is claimed to be grown organically. Does the proprietor know his supplier? Before you pay more ask for evidence that the food is actually grown organically. Efforts are underway to identify certified growers. Make inquiries. Be wary of foods that have a separate sticker or label that reads organic. It may have been put there as an afterthought. Remember that the term organic food has not been legally defined and it may be used loosely.
- Stick to stores that are neat and clean. Spilled grain or seeds attract rodents or insects. Stores should be well lighted and shelves and produce free of dust.
- Remember that the freshness of fruits and vegetables is the most important quality. Note how deliveries are handled. If you want the maximum amount of vitamins, buy produce from a refrigerated display case.
- You can do a great deal to get the most nutritional value from the food you buy. Plan your shopping so that you take your food home and store it promptly. Grocery shopping should be your last errand before you go home. Food left sitting in a grocery cart in a store or in a hot car will deteriorate rapidly.

### **When you store or preserve foods, remember the following:**

- Cool (65 degrees) dry storage is necessary to maintain nutritional quality of canned foods, root vegetables, and grains.
- Foods containing the fresh germ of grain, like wheat germ, need to be refrigerated to delay the rancidity. Vacuum packed wheat germ should be refrigerated after it is opened.
- Throw moldy legumes, nuts, and grains away. Don't try to salvage moldy peanuts or beans. A toxin or poison may have been formed.
- Because vitamin A is vulnerable to the ultraviolet rays of the sun, sun-dried peaches or apricots are not as good a source of vitamin A as fruit dried artificially. Sulfur dioxide, used to dry fruit, prevents discoloration and prevents destruction of the vitamin A precursor, carotene. It is used in very small amounts and is not harmful.
- If you are preserving garden produce, follow safe recommended procedures and processing times. Use fresh ripe produce for maximum quality.
- Milk is an important source of riboflavin. Because riboflavin is destroyed by sunlight, milk in clear glass or plastic bottles or pitchers should be put in a dark refrigerator. Keep milk clean and cold and covered.
- Keep meat in the coldest part of the refrigerator at 32°F.



### **When you are cooking, follow these suggestions:**

- Preparing food in aluminum cookware is not harmful to your health. There is no scientific basis for claims that the traces of aluminum found in food or cooking water can cause cancer. This idea arose because unscrupulous salesmen wanted to sell utensils made of other materials. Teflon (R) Cookware is also safe to use. Because of the longer cooking time, so-called waterless cooking does not preserve more nutrients than does cooking with water.

A carefully timed pressure cooker is recommended for cooking food to retain nutrients.

- All vegetables that are eaten raw or unpeeled must be washed thoroughly. Washing helps reduce the risk of bacteria or parasitic infestation. Organically fertilized soils may not contain pesticides and chemicals but they may be rich in salmonella and other sources of food-borne diseases that often inhabit the intestinal tracts of animals and are present in manure.

Wash vegetables but don't soak them. Plan to use them within 2 or 3 days. Drain well before refrigerating. Too much moisture may cause them to rot.

Wash fruits and vegetables before you cut them. Don't rinse cut fruits or vegetables such as green beans, shredded cabbage or sliced berries. Strawberries lose their vitamins very quickly after they are capped, so prepare them just before serving.

Clean, raw fruits and vegetables are good nutritionally, but cooked foods are good for you, too. Cooking reduces the risk of food-borne diseases.

Steaming, braising, and baking vegetables are recommended to conserve nutrients.

Blended fruit and vegetable beverages may be tasty but raw fruits and vegetables are good too. The detergent action of cellulose on the teeth and gums is a healthy cleansing action. Blending the fruits and vegetables tends to expose the nutrients to air, oxidizing some of the vitamins.

Cooking time for vegetables should be minimal. The shorter the time it takes for the water to return to boiling, the faster the enzymes stop oxidizing the ascorbic acid. This means that vitamin C will be retained.

Use a covered pan for yellow vegetables. Use an uncovered pan for strong-flavored vegetables or green vegetables. Leaving the cover off allows some of the acids to volatilize resulting in a more appetizing color and bet-

ter flavor. A few vitamins may be lost but if a vegetable does not look or taste good it won't be eaten, and it won't nourish anyone.

Unless it is salted, use the liquid from canned or cooked vegetables in cream sauces, soups, and vegetable juices. It contains water soluble vitamins.

- Cooking grains, rice, and beans in too much water so that they have to be drained means a loss of nutrients. All the water should be absorbed.

The B vitamin thiamine is vulnerable to dry heat. Long, dry toasting of cereals or grains reduces the thiamine content and is not recommended.

- Pasteurization of milk does not reduce the nutritional value. Raw milk can be a source of the *brucella* organism that causes undulant fever and other organisms that cause diphtheria, TB, strep throat, rheumatic fever, and many, many more diseases.

Raw meat is not more nutritious than cooked meat. Raw meat may be a serious health risk. Toxoplasmosis and tapeworm result from eating raw meat or fish. To roast safe and tasty meat, use a meat thermometer to check the internal temperature of the meat. Meat drippings or juices contain iron and the water soluble B vitamins. Use them when possible.

Eating eggs from infected birds has caused salmonellosis in humans. Using cracked eggs or eating raw eggs is not recommended.

- Anyone following a vegetarian diet that excludes dairy products, eggs, and fish should have a working knowledge of amino acid distribution in cereals, legumes, nuts and vegetables so these foods can be combined for maximum protein synthesis. A vitamin B<sub>12</sub> supplement might be recommended if you follow this strict vegetarian diet for several years.

## Glossary of foods

Much of the mystique of health foods is that they are unfamiliar or have foreign names. The following glossary briefly describes certain foods that may be termed health, natural, or organic foods, depending upon how they are raised and where they are sold.

1. **Acerola cherry**—A tropical fruit known for its high ascorbic acid content. Citrus fruits and juices, which are more readily available than the acerola cherry, can also provide recommended amounts of ascorbic acid in the diet.
2. **Alfalfa**—A legume used as animal fodder. Some people claim that alfalfa roots grow deep into the earth and, therefore, are able to probe out minerals and trace elements that more shallow-rooted plants cannot reach. This claim is false, especially if you consider that the subsoils are lower in nutrients than the top soils.
3. **Aloe vera**—Products made from the aloe vera plant, a perennial succulent of the lily family, a common houseplant. It has a centuries old reputation as a beauty aid and a treatment for cuts and burns. Recently the plant's juices are being widely distributed and promoted for self treatment of many conditions, such as colitis, asthma, acne, depression, etc. These unproven health claims are not made on the label, but made in the literature, the media, and by word of mouth.

4. **Amaranth**—This plant may be available as a leafy green vegetable or a high protein grain crop. It is among the oldest crops (or weeds) of the New World, associated with the Aztec culture. The flour may be combined with other flours to make bread, the grain can be popped, and the leafy greens used like spinach. It is a hot weather crop that is gaining popularity among home gardeners.
5. **Apple cider vinegar**—This product got its boost from Dr. D. C. Jarvis, 1958 best selling author on folk medicine. He promoted the importance of potassium in vinegar. Potassium is essential, but it is widely distributed in foods so is not necessary to take it in the form of vinegar. A potassium deficiency is unlikely, except when a person is on certain medications such as digitalis or diuretics.
6. **Bone Meal**—This is a source of calcium, phosphorus, and flouride. For people allergic to milk, bone meal may be useful. However, there are safer sources of calcium supplements. Both bone meal and dolomite have been identified as possible sources of toxic metals, such as lead, arsenic, and mercury.
7. **Brown Rice**—Brown rice is more nutritious than polished white rice, but the claim that brown rice alone is an adequate diet (the claim in macrobiotics) because it contains the same ratio of potassium to sodium as found in the blood is not valid. Brown rice is not a source of complete protein.
8. **Carob**—A dried and powdered seed pod also called St. John's bread, carob tastes something like chocolate and is used as a substitute for cocoa or chocolate. Chocolate sometimes is frowned upon because it contains the stimulant caffeine, like coffee and colas. The carob tree is native to the Mediterranean area.
9. **Desicated liver supplements**—Taking liver supplements may conceal a borderline case of pernicious anemia, making it hard to diagnose. Liver extract only supplies a portion of the nutrients in fresh liver. Claims that liver supplements provide materials from which the body manufactures vitamin B<sub>12</sub> are unfounded.
10. **Eggs**—Nutritionally, all eggs are similar—brown or white, fertile or not.
11. **Garlic**—According to folklore, garlic will cure intestinal disorders, gas, worms, respiratory infections, skin diseases, symptoms of aging, high blood pressure, TB, whooping cough, and all sorts of chronic illnesses. Garlic oil capsules are a staple of health food stores. The substances in garlic and onion that cause "bad breath" are absorbed into the blood stream and exhaled from the lungs. Mouthwash cannot remove the taste.
12. **Herbal Teas**—About 400 varieties of herbal teas are available. These aromatic beverages drew more than \$140 million in sales in 1979. They are popular among people that are avoiding sources of caffeine. Information on their safety is meager. It would be wise to use a variety of teas in moderation to minimize the exposure to any side effects.
13. **Honey**—In honey you get some plant material and an excellent flavor, along with very small amounts of trace vitamins and minerals. One cup of honey contains less iron than two slices of whole wheat bread. Jam, jelly, orange juice, and ice cream labels that say "contain honey" could mean just one drop of honey to a container. The contents of these products are set by government standards; manufacturers are not required to disclose

the percentage of ingredients on the label. Honey producers sometimes feed their bees sugar and water, but food laws do not permit the sale of honey produced in this manner. Antibiotics are used to keep bees disease-free, however honey does not contain the antibiotics. Supposedly organic honey is heated to a lower temperature than regular honey before filtering, thus conserving nutrients. Health food stores do carry many varieties of honey that are a welcome change of flavor. Claims that honey will cure arthritis and may be used without restraint as a sweetening agent by diabetics are not true.

14. **Lecithin**—A natural emulsifier found in egg yolks, milk, soybeans, and curd, it is frequently sold in health food stores in capsules. It has not been demonstrated in research that it is an antidote to cholesterol and can dissolve the fatty accumulations in the blood vessels to help prevent heart attacks. Claims are made that it will eliminate liver spots and be beneficial in cases of dry skin and psoriasis. These claims are not proven.
15. **Milk**—Do not use raw milk. Many diseases can be transferred by raw milk. The process of pasteurization makes no significant nutritional difference but is an important protection for your health. Cheese made from raw milk is safe if aged more than 60 days.
16. **Nutritional yeast**—A nonleavening yeast grown for human consumption, this is a good source of protein and B vitamins. It comes in powder, flake and pill form. The powder is more concentrated and it can be added in small amounts to breads, soups, stews, and meatloaves. Store in a tightly covered jar away from light. Don't confuse nutritional yeast with baking yeast. Baking yeast is a live substance that may continue to grow in the intestines with deleterious results if it is eaten raw. Problems with protein (nitrogen) metabolism, such as gout, might develop if one eats too much nutritional yeast.
17. **Raw sugar**—Raw or Turbinado sugar is a common choice of people who want to avoid refined sugars. However, it is not "raw," but a highly refined product that has molasses covering the crystals. There is no significant difference in the mineral content of raw and refined sugar. People may want to use honey, raw corn syrup, or unsulphured molasses, which do have a small amount of minerals in them. Products made with raw sugar are not worth the extra amount of money. You may use any sweeteners that you prefer, but it is wise to use any or all of them in moderation.
18. **Rose hips**—Rose hips are a good source of ascorbic acid. The wild rose has a seed pod that is richer in vitamin C than cultivated roses. Rose hips can be used to make tea, jams, syrup, and soup. If rose hips are available in your woods, take advantage of them. If they are growing along a road or a railroad, be sure that they have not been sprayed with pesticides. Rose petals, also edible, have a delicate flavor that can be used in everything from preserves and omelettes to cakes and candies. Rose water, which is distilled from the rose petal, is widely used in the Middle East.
19. **Sea Salt**—Unrefined salt from evaporated sea water contains trace minerals, but because of other contaminants it is unacceptable to the FDA. The white sea salt sold in markets has been refined. The additive (sodium silico aluminate) in ordinary table salt makes it flow and keeps it from clogging the salt shaker. It is not a dangerous chemical.

20. **Seeds**—Seeds of all sorts (pumpkin, sesame, sunflower, and watermelon) are popular. Like wheat germ, seeds can be a source of valuable nutrients but they are concentrated sources of fat and calories. However, some seeds such as peach pits or apple seeds are poisonous if they are eaten in large amounts.
21. **Soybeans**—Soybeans have been a mainstay of oriental diets for thousands of years. The western world has not yet used this little bean to any great extent. It has high quality protein, calcium, and B vitamins. It is valuable as a milk substitute. It can be used fresh or dried, in a beverage, custard (tofu) or cheese, as flour or grits, as oil or sauce, or as sprouts or roasted snacks.
22. **Spirulina**—This algae or plankton is being promoted as a highly nourishing item to be used as a diet supplement or in weight reduction. It is not a super-food. It's nutrient content is similar to spinach. Unproven claims have been made regarding its therapeutic effects in cases of diabetes, liver diseases, and ulcers. There have been problems with the product not being in compliance with government standards for filth, such as insect parts.
23. **Sprouts**—Sprouts are added to salads, soups, or casseroles, and are excellent as fresh vegetables. Mung bean sprouts are sweet and crunchy and tender enough to be used raw and substantial enough to stand sautéing. The beans can be used unsprouted just like other dried legumes in soups and stews. Some people like to sprout seeds and beans at home to add variety to their meals. One analysis of mung bean sprouts indicates that you have to eat about a quart of sprouts to provide the same amount of vitamin C as an orange. It takes 100 grams or over three ounces of alfalfa sprouts to provide 16 milligrams of vitamin C and 5 grams of protein. One half cup of reconstituted frozen orange juice contains 60 milligrams of vitamin C.
24. **Wheat germ**—It contains protein, the B vitamin complex, vitamin E, iron, other minerals, and carbohydrates and fats. It is susceptible to rancidity and needs to be refrigerated. It is a nutritious cereal and adds flavor to casseroles and baked goods.
25. **Whole grain flour and bread**—Some people are buying stone ground whole wheat flour. The wheat berry is slowly ground between millstones. Claims are made that the molecular structure of stone ground flour remains intact, thus preserving the nutrients. Claims of superior nutritional quality of stone ground over commercially ground whole wheat flour are not substantiated.

If you buy whole wheat flour, look for dated packages. Because the whole berry is used in the flour, it contains the germ of the wheat. This is the most nutritious part and it also possesses oil that becomes rancid without refrigeration. Therefore, the shelf life of whole wheat flour is limited. To keep whole wheat bread fresh, store it in the freezer. Refrigerated bread gets stale faster than bread that is frozen or kept at room temperature.

For variety look for whole wheat, buckwheat, bulgar, oats, brown rice, rye flour, wheat germ or wheat bran. Enriched or whole grain, cooked, or ready-to-eat cereal, bread and flour contribute to a nutritional food intake.

Cracked wheat or crushed wheat products are made from wheat that is broken into fragments for addition to the flour or bread dough. Cracked wheat is the whole grain cracked into separate pieces and free from flour.

The dark color of some breads, such as pumpernickel, is not an indication of the presence of whole grains, but of added color.

If you want to avoid the chemicals in bleached flour, select enriched unbleached white flour. Unbleached white flour that is not enriched offers fewer vitamins or minerals than any other flour. The baking characteristics of enriched unbleached flour are similar to the characteristics of enriched bleached flour.

- 26. Yogurt**—Yogurt is a fermented milk product that has the same nutritional value of the milk from which it is made (protein, calcium, many of the B vitamins). Compared to the price of milk, yogurt is expensive wherever you buy it. One way to beat the high price is to make your own using commercial yogurt as a starter. Milk must always be heated to pasteurization point before adding the yogurt culture. Claims often are made that the health value of yogurt is to change the intestinal flora or bacteria. For most people on a mixed diet the intestinal flora function well, and any change in intestinal flora is temporary, even though large amounts of yogurt are eaten.

### **Some closing thoughts**

- Be informed. Try to be open minded without being gullible. Analyze what you hear and read. Frequently decisions have to be made without complete knowledge or understanding, but we do need to think and continue to learn.
- Beware of claims to cure or prevent diseases. The pain of arthritis and the suffering of cancer victims leaves us easy prey to those who exploit our fears of poor health or old age. Food contributes to our health but it cannot cure or prevent illness or diseases.
- Beware of claims of superior nutrient content or supplements that are the easy, magical way to superior health, muscular strength, stamina or virility.
- Recognize the difference between scientific research and personal testimonials. Scientific research requires that the differences between a control group and an experimental group be measured (people or experimental animals). Statistical analysis must be done to establish that the differences between the experimental and control groups are significant, and not a matter of chance.

Anyone can publish a talk about their personal experiences or observations. It is just one person's experience. It doesn't matter whether or not the person has advanced degrees in nutrition or medical degrees; personal testimonials are not scientific research. Scientific research is needed to answer questions about nutrition, not opinions.

There will always be controversy regarding the interpretation of research. Reputable researchers publish their findings so that others might review the methods and results and build on the reported research.

- Remember that in the world of scientific research, claims cannot be made until they are proven. However in the world of freedom of speech, promoters can make any statements they wish, and legally they are protected until their claims are proven false or harmful to the public welfare.

The public will continue to be exploited until they demand evidence that the claims made for some products are proven by their promoters.

- The government cannot regulate a totally safe environment. There will be risks and benefits associated with all food laws.
- The best insurance for good nutritional health is to eat a variety of foods in moderation. This will provide the nutrients needed for good health and reduce exposure to any risk factors that may be present in the food supply.

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