

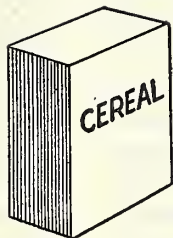
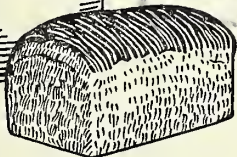
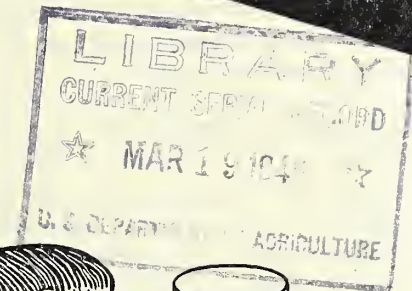
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FOODS -

*Enriched
Restored
Fortified*

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FOODS -

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Out of the discoveries of science has grown a great respect for food as nature produces it.

If we have plenty of sunshine and the soil and water are not deficient in essential elements, it is easily possible to secure from natural foods everything that our bodies need. At present, however, this is not so easy as it used to be because cooking, sterilizing, preserving, refining—all take their toll of food values. But at the same time, each operation has brought remarkable benefits—adding to the palatability, reducing communicable disease, and making a variety of foods abundant and cheap all through the year.

There are many signs that our national diet is improving. The use of milk, fruits, and vegetables has steadily increased. Many children grow bigger than their parents and have more beautifully formed bodies. In spite of these good signs, Nation-wide surveys in 1934-36 by the Bureau of Human Nutrition and Home Economics revealed that one-third of our population was poorly fed. Too many young

men were found unfit for military service in part because of poor nutrition. Many people still do not know how to select a good diet, others cannot afford it or are not interested.

To make a stronger nation, many Federal groups devoted to the health and welfare of people cooperated to take some action for the benefit of everyone. State, county, and city organizations also joined in the movement. Through the efforts of all these groups, foods that have long lost certain values are having some of these returned as one way to improve national diet. It is still just as important as ever to improve food selection and to teach better methods of food preparation, but since this will take a rather long period of education, the program of enriched, restored, fortified foods has been undertaken.

Following is a description of a few staple foods—flour, bread, cereals, oleomargarine, salt, and milk—to which nutritional essentials have been added or returned.



ENRICHED WHITE BREAD AND FLOUR

A movement to improve white flour and bread had started even before the United States entered the war. Then in January 1943, War Food Order No. 1 required the enrichment of all baker's white bread by the addition of three vitamins—thiamine, riboflavin, and niacin, and one mineral—iron. Later, an amendment required the enrichment of white rolls and buns.

Bread Plays Important Diet Role

Few people realize how important is that most ordinary, inexpensive, everyday food—bread. They remember that bread and grains are important for their energy value, and the fact is they do contribute more calories to our national diet than any other one type of food.

But, in addition, grain foods in 1944 offered almost as much protein as we gained from meat, poultry, game, and fish combined, though, of course, if eaten to the exclusion of eggs, milk, meats, and green vegetables, the grain protein is of poorer quality for building human bodies. Grain foods in 1944 also supplied over one-fourth of the iron, thiamine, and niacin, as well as one-sixth of the riboflavin, of our total food supply, as shown in the chart on page 4.

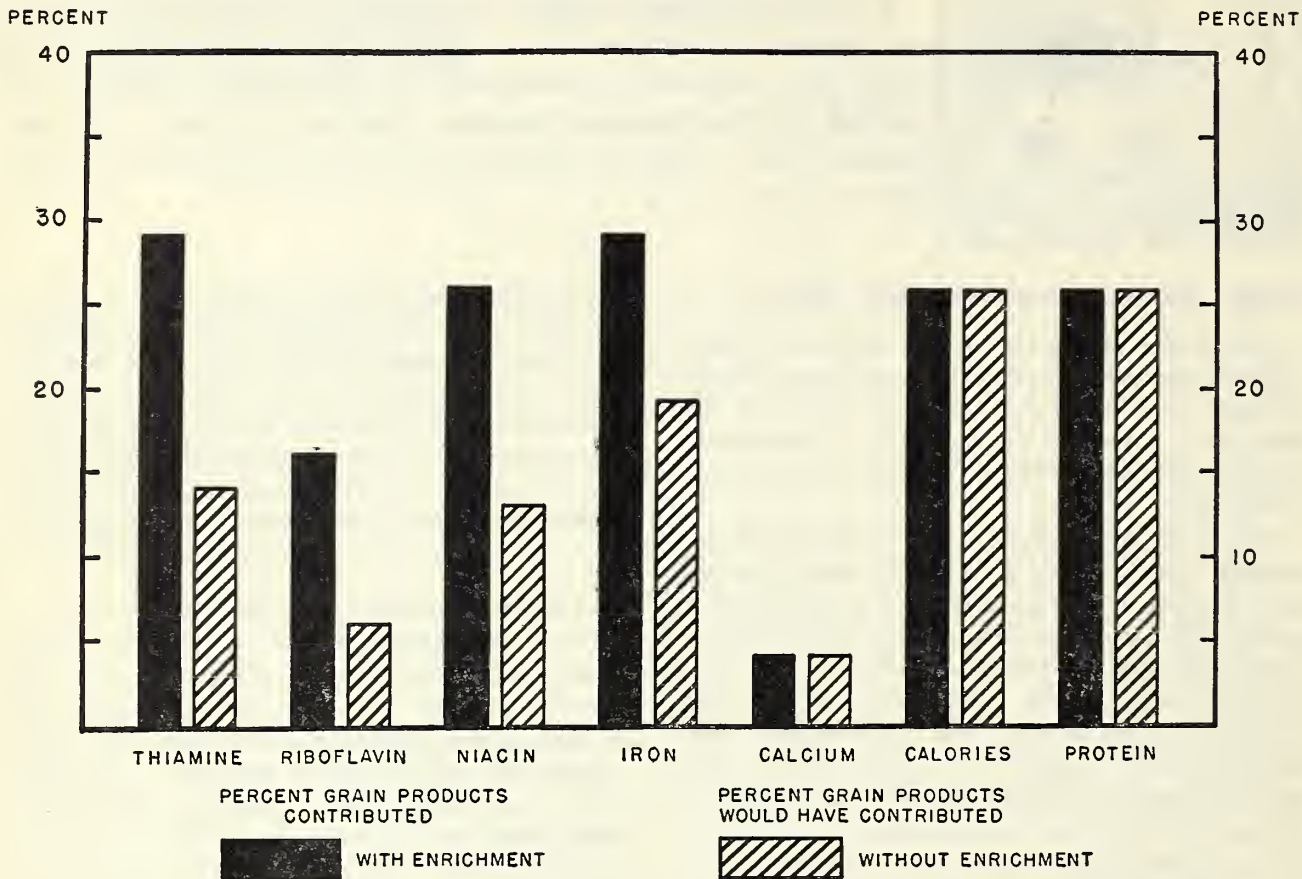
This chart also shows how much the enrichment program increased the contribution that grains made in these vitamins and iron. In this way, part of the values are regained that have been lost in milling ever since 60 years ago, when millers began to tear the wheat apart between corrugated steel rolls. This

milling separated the outer coating of the grain and the wheat germ from the starchy sections. Without these parts the flour was whiter and finer and had better keeping qualities. So the germ and the bran were thrown into cattle feed, and humans lost from wheat flour about seven-eighths of the thiamine and niacin, three-fourths of the riboflavin, and four-fifths of the iron, as well as some calcium, phosphorus, fat, and some protein of the best nutritional quality.

B Vitamins and Iron Added

The values added to flour by enrichment may be seen by comparing ordinary white flour with the enriched product. The chart on page 5 shows that enrichment has increased the thiamine in white flour seven times, riboflavin about eight times, and niacin and iron about four times. These approach the full wheat values for these nutrients except for riboflavin, which is considerably higher. This is done so that bread will provide a significant addition of riboflavin to the daily diet. There is still not as much protein in enriched white flour as in whole-wheat flour, nor is its nutritional quality as good.

NUTRIENTS CONTRIBUTED BY FLOUR AND GRAIN TO CIVILIAN FOOD SUPPLY IN 1944



HOW ENRICHED FLOUR COMPARES WITH PLAIN WHITE AND WHOLE-WHEAT FLOURS IN NUTRIENTS PER POUND

	PLAIN WHITE	ENRICHED WHITE	WHOLE - WHEAT
THIAMINE (mg.)	0.3	2. - 2.5	2.5
RIBOFLAVIN (mg.)	.15	1.2 - 1.5	.56
NIACIN (mg.)	3.5	16. - 20.	25.3
IRON (mg.)	3	13. - 16.5	17.3
CALCIUM (mg.)	86	* 86	173
PROTEIN (gm.)	49	49	59

* Enriched flour may contain 500 to 625 milligrams of calcium per pound, as well as 250 to 1,000 U. S. P. units of vitamin D, as optional ingredients. At present these are not ordinarily used. Enriched self-rising flour, in addition to the other ingredients, contains not less than 500 and not more than 1,500 milligrams of calcium per pound.

The Bureau of Human Nutrition and Home Economics estimates that in 1945 enrichment will raise the amount of thiamine in the American food supply one-fourth; niacin, one-fifth; iron, one-sixth; and riboflavin, one-eighth. What is the significance of these increased nutrients?

B Vitamins Guard Health

The B vitamins are needed for many essential jobs. Without *thiamine*, the disease beriberi occurs. This name in the Singhalese language means *weakness* or *I cannot*, which is descriptive of the symptoms.

Without enough *thiamine* the use of fuel foods is hindered, people lose appetite, tire easily, and have difficulties with digestion, elimination, heart, and nerves.

A shortage of *riboflavin* stunts the growth of young animals. In humans it results in sores at the corners of the mouth, a condition called cheilosis. Eruptions may occur on other parts of the face, and the eyes may be affected.

The third B vitamin, *niacin*, is an essential factor in preventing pellagra, which affects many people, especially in the South.

Iron Needed by the Blood

Too little iron in the diet gives a tendency toward dietary anemia, a condition in which the blood loses some of its red color and its ability to carry oxygen. This may make children and adults more susceptible to infection and give feelings of weakness and depression. However, the use of enriched bread and flour makes it probable that supplies of iron in the normal diet will usually be adequate.

How the Program Developed

Nutrition experts, millers, and bakers have cooperated to make the enrichment program work. Here are the highlights of its progress.

In May 1941, President Roosevelt called a National Nutrition Conference for Defense. At that time the Administrator of the Federal Security Agency announced the effective date of a standard for enriched flour under the Food, Drug, and Cosmetic Act. No standard for bread was stated, but it was generally agreed by all parties concerned (the Food and Nutrition Board of the National Research Council, the Food and Drug Administration, the American Bakers' Association, and the Millers' National Federation) that bread made from enriched flour could be called "enriched." Bread could also be enriched by adding iron and synthetic vitamins with or without milk; by the use of enriched yeast; or by a combination of these methods.

At first enrichment was voluntary on the part of the millers and bakers, and by the end of the first

year about one-third of the white bread was enriched. By the end of the second year about three-fourths of all family flour and baker's white bread was enriched.

In January 1943 War Food Order No. 1 required enrichment of all baker's white bread, either through the use of enriched flour or by the addition of enrichment ingredients to the dough. Italian, French, Vienna, and salt-rising breads were included.

In October 1943 an order required higher levels of iron, thiamine, and niacin and made the inclusion of riboflavin mandatory. Previously the supply of riboflavin had not been adequate so that the effective date of its use had been postponed.

In May 1944 further War Food Administration orders extended the enrichment to all kinds of white rolls and buns made from breadlike dough that are not coated or filled.

Products that were not covered by the enrichment order are: Sweet rolls that are filled or iced; raisin bread; wheat and rye breads made with varying amounts of white flour; bread and rolls baked by hotels, restaurants, and institutions for use on the premises.

At present (1945) the Federal orders are for enrichment of white bread and rolls, while enrichment of white flour is still voluntary except in those States that have passed legislation. Although about three-fourths of the white flour for families is enriched, some families doing their own baking with the plain flour are not obtaining benefits of the enriched products.

Enrichment Becoming State Law

There is no assurance that the enrichment of flour and bread will be continued on a national scale after the war order for mandatory enrichment expires except in those States where laws have been passed. The following 18 States have already passed laws providing for enrichment of all white flour and white bread sold within their borders: Alabama, Arkansas, Georgia, Indiana, Kentucky, Louisiana, Maine, Mississippi, New York, North Carolina, New Hampshire, North Dakota, South Carolina, South Dakota, Texas, Washington, West Virginia, and Wyoming. Puerto Rico and Hawaii also have enrichment laws.

The National Research Council is interested in seeing that the benefits of enrichment are available

to all people. Its staff is prepared to give scientific information to any group interested in enrichment.¹ Since many States desire to introduce legislation to assure enrichment, the Council of State Governments has distributed a suggested bill to all the States.

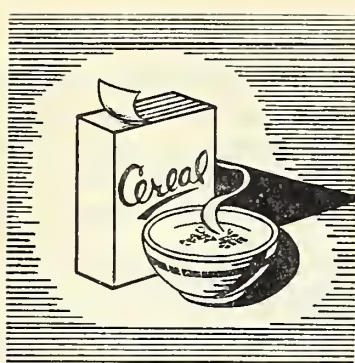
Four years' trial seems to indicate that enrichment of flour and bread is an effective, practical, and economical way to raise the level of thiamine, riboflavin, niacin, and iron for everyone. Ingredients to enrich all the flour and bread sold in the country would not cost more than 18 cents per person annually at 1945 prices.

¹NATIONAL RESEARCH COUNCIL. THE FACTS ABOUT ENRICHMENT OF FLOUR AND BREAD. 15 pp. Washington, 1944; supp., 1945.

HOW ENRICHED BREAD COMPARES WITH PLAIN WHITE AND WHOLE-WHEAT BREADS IN NUTRIENTS PER POUND

		Minimum - Maximum		
THIAMINE	(mg.)	0.3	1.1 - 1.8	1.3
RIBOFLAVIN	(mg.)	.5	.7 - 1.6	.7
NIACIN	(mg.)	3	10 - 15	16
IRON	(mg.)	3.9	8 - 12.5	11.8
CALCIUM	(mg.)	254	* 254	272
PROTEIN	(gm.)	39	39	43

* Enriched bread may contain 300 to 800 milligrams of calcium per pound, as well as 150 to 750 U. S. P. units of vitamin D, as optional ingredients.



OTHER FORTIFIED OR RESTORED CEREALS

Most nutritionists are in favor of limiting enrichment to only a few staples. They also believe that the amounts of nutrients added should not be out of proportion to the nutrients obtained in good natural diets. Following are some other grain foods that are now or may soon be enriched.

Corn Meal and Grits

Lowest in cost of all cereal products, corn meal and grits are staple foods of the South. Many people eat more than half of their cereal foods as corn. Corn, and especially degerminated corn products, are low in the B vitamins, particularly in niacin, needed to prevent pellagra.

Although the death rate from pellagra has decreased, 1,303 deaths were reported from pellagra in 1943. The number of pellagra cases estimated for that year by the U. S. Public Health Service was 43,400. The enrichment of corn products seems to be one way of helping to eradicate this deficiency disease. Five Southern States already have laws requiring that degerminated corn products be enriched (Alabama, Georgia, Mississippi, North Carolina, and South Carolina). State extension and public health organizations are actively helping to make the program of improving degerminated corn products successful.

The enrichment of whole corn products, particu-

larly with niacin and riboflavin, is being encouraged because they are the staple foods of many who depend most on corn. Since most of the corn meal supply of the rural South is produced by over 15,000 small scattered mills, it would be very difficult to enforce enrichment legislation for whole corn meal. Until legislation is possible, nutrition committees and public health workers are encouraging small local millers to do the enriching voluntarily.

In South Carolina, the State experiment station has developed an enrichment mixture which may be added to corn at the mill. They have also designed a small feeder that can be attached to any type of corn mill. Between 75 and 100 mills in the State are cooperating and are enriching their whole corn meal.

At present there is a lack of uniformity in the State laws for corn meal enrichment, but efforts are being made to establish a standard. Three of the five States enrich degerminated corn meal with the same amounts of the three B vitamins and iron that are added to white flour.

Macaroni and Spaghetti

Second to bread in furnishing calories to the people of Italian descent are macaroni and spaghetti. The manufacturers of macaroni and other "alimentary pastes" requested the Administrator of the Federal Security Agency to call a hearing to consider enrichment standards. This was held, but no decision has yet been reached. These alimentary pastes could be made with corn germ or wheat germ, or by adding enriching ingredients to the dough. A standard has been made for macaroni products containing soy flour.

Rice

Rice loses important values in refining. Brown rice and undermilled rice contain more of the original protein, calcium, B vitamins, and iron than white rice.

In India for many years it has been customary to parboil rice before removing the bran. Treated in this way, the rice retained more of its original nutrients.

A modern commercial "converted" rice is made by steaming rice under pressure and drying it before milling. This spreads the vitamins of the bran and germ into the kernel. While the converted rice has

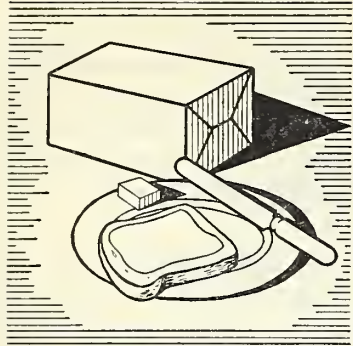
a creamy color, most of the color disappears during cooking. The conversion not only adds to the vitamin and mineral values but glazes the surface of the grains so they do not break so easily during milling. When cooked, the grains of converted rice keep their shape and are not sticky.

As opposed to retaining the natural values in rice, methods of enrichment are also being tried. In these, a fortified premix is made by bathing white-rice kernels with a concentrated solution of vitamins. These kernels are then coated with a film-forming substance or a thin membrane that prevents the loss of the vitamins when the rice is washed. This fortified premix is then blended with the plain white rice to enrich it all.

Breakfast Cereals

Whole grains make most desirable breakfast cereals. However, when the loss of important nutrients is unavoidable in breakfast cereals, the Food and Nutrition Board of the National Research Council expresses itself as favorable to fortification or restoration.

Processed cereals may be restored to whole grain levels by the addition of thiamine, niacin, and iron. Enrichment of breakfast cereals is being done voluntarily by the manufacturers.



FORTIFIED OLEOMARGARINE

About 99 percent of the oleomargarine now sold is fortified with a minimum of 9,000 United States Pharmacopoeia (U. S. P.) units of vitamin A to the pound. Some manufacturers have recently raised the level to 15,000 U. S. P. units per pound.

Why We Need Fat

Fats and oils are needed for good health. Without fat in their foods supplying certain fatty acids, animals fail in health, stop growing, lose hair, are unable to reproduce, and finally die. Humans, too, need fat, though not so much is known except that without some fat they develop a scaliness of the skin and their blood composition changes.

We know, too, that fat has a higher energy value by weight than any other foodstuff and makes our meals taste better and feel more satisfying. Because fat foods are digested slowly, they remain longer in the stomach than other foods and give "staying" power to a meal.

Certain table fats are also important in the diet because they carry vitamin A.

Why We Need Vitamin A

Experiments have shown that vitamin A is required by animals for growth and for reproduction. It is needed for normal skin and good eyesight.

With too little vitamin A, the mucous membrane of the nose, throat, lungs, and many organs of the body are affected so that they are more subject to infection. We obtain most of our vitamin A in the form of carotene from fruits and vegetables, especially the green and yellow varieties. Milk products, liver, and table fat are also important sources of vitamin A.

What happens when the vitamin A in food is low may be illustrated by examples during the first World War. Shifted from usual dairy products to skim milk and unfortified margarine, many children in war zones were threatened with blindness. When whole milk was prescribed along with liberal doses of cod-liver oil to provide vitamin A, the eye troubles rapidly disappeared if destruction of the cornea had not gone too far.

How Much Fat Do We Need?

About 68 pounds of fat per person per year was recommended as a reasonable allowance by a special committee on fats of the National Research Council in 1942. About 40 pounds could be the "invisible"

fat in such foods as meat, eggs, nuts, and milk. About 28 pounds are "visible" fat such as butter, margarine, lard, salt pork, and other fats and oils. This amounts to about a half pound of fat, purchased as fat, per person per week. Average consumption in this country has been more than twice this quantity.

For many years each person has used an average of about 18 pounds of table fat per year, with margarine comprising 1 to 3 pounds of this. In 1944 the total amount of table fat used averaged about 15 pounds, with margarine comprising about 4 pounds. Some people use no margarine, but for those who use it as their only table fat, it should carry vitamin A.

What is Oleomargarine?

Even before the Food and Drug Administration adopted a standard for oleomargarine, the Supreme Court recognized a certain brand to be "a nutritious and pure article of food, with a well-established place in the dietary."

Margarine was first made in 1869 in response to an offer of a prize by Napoleon III for a nutritious, economical, and appetizing fat for table use. As it is made by 41 manufacturing plants in the United States, margarine contains a mixture of animal fats and vegetable oils or one or the other—fats that have been used as food for centuries. These are partially hydrogenated and blended to give the right spreading consistency. They are refined, melted, mixed, and churned with pasteurized milk, ripened to give a pleasing lactic acid flavor. Small amounts of other emulsifying agents and salt are added, and sometimes

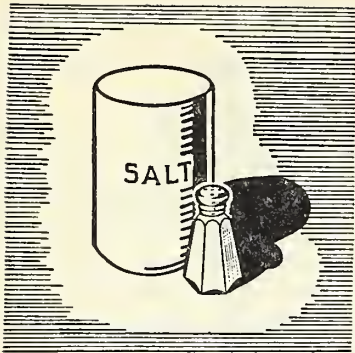
sodium benzoate as a preservative. Then the margarine is chilled.

Margarine must contain at least 80 percent fat. In 1943 nine-tenths of the fat consisted of vegetable oils—about 50 percent cottonseed, and about 40 percent soybean. All of the table fats are equally digestible—that is, one is as easily and completely digested as another. Since margarine is now composed chiefly of vegetable fat and contains very little or none of the oleo oil obtained from animal fats, "margarine" is the name that is becoming common, though "oleomargarine" must be printed on labels.

In common practice, at least 9,000 U. S. P. units of vitamin A per pound are added to the margarines that are fortified. In 1942 about 85 percent of the margarine was fortified, in 1943 over 90 percent was fortified, and now more than 99 percent is fortified. A few companies are beginning (1945) to add 15,000 units of vitamin A per pound, and there is evidence that the entire industry will soon adopt this level.

The production of margarine increased from about 300 million pounds in 1939 to over 600 million pounds in 1943.

To help safeguard the health of families of low income by increasing the vitamin A in their diets, the following six States have passed laws requiring the fortification of margarine: Tennessee, South Carolina, Louisiana, Alabama, Texas, and Mississippi. In every State, especially those where consumption of dairy products is low, nutrition committees and public health groups are working to assure families the benefits of this wholesome, economical table fat.



IODIZED SALT

One of the first staple foods to be treated on a large scale for improving public health was refined table salt. Since about 1924 it has been possible to buy table salt containing small amounts of iodine (1 part sodium or potassium iodide to 5,000 parts salt).

Why We Use Salt

Table salt, sodium chloride, is indispensable for humans and animals. It offers elements that assist in the production of digestive juices and in the secretion and excretion of liquid materials, thus keeping the water content of our blood and tissues balanced. In fact, sodium chloride is a part of every living cell and is concerned in almost every body process.

We tend to use more salt than we actually need. A heavy salt eater may consume five times as much salt as one who uses it lightly. However, profuse perspiration carries out so much salt from the body that extra salt is needed to replace it. People working in the sun or in hot factories, furnace rooms, or mines will avoid fatigue, dizziness, even "heat cramps" by taking extra salt with drinking water.

Why We Need Iodine

Large areas of the earth's surface do not furnish enough iodine in the foods or the water for animals and humans. This deficiency shows itself in many

ways through its effect on the thyroid gland. Most frequent is the enlargement or hypertrophy of the thyroid, one form of goiter. This seems to be due to the effort of the thyroid to get the last traces of iodine from the blood. Goiter may also arise from causes other than lack of iodine.

A constant, small iodine supply is needed to insure the healthy functioning of the thyroid, one of the most important regulators in the whole body. The thyroid governs the rate at which our bodies use food materials, especially energy foods, and helps to keep a balanced interrelation among other glands.

When there is not enough iodine, so that the thyroid is not functioning properly, many changes occur in the body. Usually basal metabolism is markedly decreased, causing a lower body temperature and difficulty in keeping warm. In the young, both mental and physical growth, including sex development, are stunted; in adults, mental efficiency is impaired, skin and hair are dry, and face swollen. There is a loss of resistance to infections. Among animals the young may be born hairless and dead.

Goiter is Widespread

For as long as we have records, goiter has occurred among people all over the world. In the United States we have a wide goiter belt stretching across the country where the soil is low in iodine. Goiters occur most frequently around the Great Lakes and in the Northwestern States. Southern Gulf and eastern seaboard States seem to have enough iodine naturally.

In 1917 two doctors examined all girls from the fifth to the twelfth grades in Akron, Ohio. Goiter tends to occur in adolescence and is six times more frequent in girls than boys. They found that over half the girls had enlarged thyroid glands. Over 2,000 volunteered to take small doses of iodine. As a result of 2½ years' treatment, only 5 of the more than 2,000 girls treated showed a further increase in their thyroids. In contrast, nearly 500 of a similar group of girls who were not treated developed enlarged thyroids during the same time.

In sections where iodine is low in the soil, iodized salt is the best way that has been discovered to get the iodine needed to prevent simple goiter. About the same proportion of iodine is restored to table salt as is lost during refining.

If you live in the goiter belt, be sure to use iodized salt, unless your doctor advises against it. About half the salt sold is now iodized, but many people do not know of its benefits.

If You Have a Goiter

While simple goiter can be prevented by the regular use of iodized table salt or other dietary means, the cure of goiter is a medical problem. The Council on Foods of the American Medical Association cautions that "persons over 30 years of age with any swelling of the throat should not use iodized salt unless they do so under the direction of a competent physician."

Iodized Salt Proves Beneficial

In Michigan, where goiter was most common, salt manufacturers cooperated with the State Medical Society and the State Board of Health to make iodized salt the chief salt used. After 10 years the percentage of goiter cases was reduced from about 40 percent in 1924 to 8 percent in 1935. In Midland County, where one-third of the children had well-established goiters and practically every child had some enlargement, goiter was practically stamped out and 90 percent of the children became normal.

As a result of the Michigan study, a committee on goiter control of the American Public Health Association is now working to stamp out goiter in the whole country. The committee's success depends in large part on the continued cooperation of the manufacturers in making iodized salt available to the public. It also depends on the help of nutrition leaders in reeducating people in regard to the need for using iodized salt.

VITAMIN D MILK

Pasteurized milk, fortified with 400 units of vitamin D to the quart, is on the market. Practically the entire supply of evaporated milk is also fortified to give 400 units of vitamin D to the quart when reconstituted with an equal amount of water.



Milk for Young and Old

Milk is the most essential food of childhood, but it would also be hard for adults to do without it. Milk products furnish more calcium and riboflavin in our national food supply than any other group of foods. In fact, in 1944 three-fourths of the calcium and two-fifths of the riboflavin we got came from milk and its products. Milk is also a good source of phosphorus.

While most of the calcium in our bodies occurs in the bones and teeth, calcium is also needed to maintain the vitality of the whole body. It is especially important for women to have plenty of calcium during pregnancy and lactation. From the mother's store of calcium, the fetus draws its supply for the development of its skeleton.

The need for riboflavin has already been discussed, but a plentiful supply is especially desirable during pregnancy to help insure the normal development of the fetus.

In addition to these two factors, milk products other than butter yielded in 1944 almost a fourth of

the protein and a sixth of the vitamin A in our national food supply. An increasing use of milk is desirable because "no other food exceeds milk in the possibilities it holds for the improvement of human life through better nutritional well-being."

The Value of Vitamin D

The value of vitamin D in the diet is closely related to that of milk, for it aids in the body's use of calcium and phosphorus so abundant in milk. Sufficient vitamin D prevents the childhood disease of rickets, influences the rate of growth of children, and is important in tooth formation. It means better built bodies and freedom from the faulty pelvic bones that have handicapped many women in childbirth.

We know most about the requirements of infants for vitamin D. The recommended allowance of the National Research Council for infants calls for 400 to 800 units of vitamin D per day. While we know little about the needs of other age groups, 400 to 800 units is also suggested for pregnant and nursing

women. Adults ordinarily get the vitamin D they need by exposure to sunshine.

One can get vitamin D from fish-liver oils and from some foods as one gets other vitamins, or vitamin D can be produced in the skin by direct sunlight. When the ultraviolet rays from the sun or an ultraviolet lamp shine on the skin, vitamin D is formed in the body.

Why Vitamin D is Added to Milk

Since only a few common foods contain vitamin D in significant quantities, it is usually difficult for children to obtain enough vitamin D from food, especially in the winter. Then fish-liver oils or some other form of vitamin D should be supplied in the diet. Vitamin D is soluble in fat and occurs abundantly in the liver and the oils of many fish. While there may be small amounts in the fat of egg yolk, cream, and butter during the summer, they cannot be depended upon to supply enough.

Since milk is the main food of children at the age when they are most susceptible to rickets, it has been agreed upon as the logical food to fortify with vita-

min D. In this way the three nutrients, calcium, phosphorus, and vitamin D, in good proportions would be consumed together.

Vitamin D may be produced in the milk by irradiation or may be added in the form of products made from fish-liver oils or various vitamin D concentrates. Vitamin D may be produced in milk by giving cows feed of high vitamin D content.

Such vitamin D milk is very desirable for children who are not obtaining vitamin D regularly from sunshine and other sources. For infants and children under 2 years of age, an additional source of vitamin D may be required, because they are breast-fed or are not taking a full quart of milk per day. All premature infants are considered by physicians to need more than the minimum allowance of 400 units recommended by the National Research Council.

For older children who take a quart of milk a day, vitamin D milk, containing 400 units to a quart, will probably supply sufficient vitamin D in all but exceptional cases. When other vitamin D preparations, such as fish-liver oils or viosterol, are taken regularly, it is not necessary to use the vitamin D milk.

"NATURAL ENRICHMENT" OF FOODS

While at present it seems desirable to return to some foods a few of the values that have been taken away during commercial processing, the result is often not equal to the original.

The work of the nutrition teacher and the scientist has only begun. There are still many more nutrients to be saved in food than we have dreamed of. For

instance, food tables can give little credit to milk as a source of vitamin C. Yet the cows of this country in the 10-year period 1932-41 produced three-fourths as much vitamin C as the citrus fruit orchards. At present much of this vitamin is lost, but through improved methods in pasteurizing and handling milk it may some day be saved.

A much greater use could also be made of natural food materials for "enrichment." Bread and cereals are examples. Since they are fundamental in the low-cost diet, why not make them as nourishing as possible? Adding iron and three B vitamins to white flour is only an approach to whole wheat. The full grains contain still other vitamins, minerals, and more protein of a better nutritional quality.

With grain foods affording over a fourth of the protein in our national food supply, the fullest possible use should be made of this protein. This could be done with "natural enrichment," using such a good protein supplement as milk to supply the missing amino acids. In addition to its protein, milk also enriches grain products liberally with calcium and riboflavin, and with vitamin A if the whole milk is used. The use of a liberal amount of milk solids in bread should be encouraged just as much as ever, even though the bread is enriched with B vitamins and iron.

Besides adding milk as a way of naturally improving grain products, there are large potential supplies of wheat germ, corn germ, soy flour, brewers' yeast,

and dried egg that might be added. All these offer valued minerals and vitamins. Small quantities of any of these foods will also improve the protein and therefore the growth-promoting values of white flour. For instance, by adding just 5 percent of soy flour to 95 percent of white flour the protein is increased 19 percent and the combination gives twice the growth-promoting value of the wheat flour alone. This small amount of soy flour makes little change in the flavor or appearance of the baked products. Experiments have shown that small amounts of the other protein foods will also improve white flour.

But it is not enough for science to discover these facts. Nutritionists must keep working to overcome the prejudices of people and help them to substitute good food habits for poor ones, so that it will be possible for all people to secure the foods they need. National food habits have changed, but we still know more about nutrition than we are now practicing. By using the information that we have now to improve the quality of our food, the Nation can achieve greater vigor, increased length of life, and greater agricultural prosperity for its citizens.

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