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Nutrition

Michigan State University Extension Service

Fitness 7

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NUTRITION

How is nutrition related to your health?

What can you do about it?

For many years the emphasis in nutrition has been on preventing nutritional deficiency diseases. However, few people now have scurvy or pellagra; today we see another type of malnutrition. This is over-nutrition, or getting too much to eat. It is becoming increasingly apparent that many of the major health problems in the United States are associated with over-nutrition.

Research studies indicate that nutrition plays an important role in the development and treatment of certain types of heart disease, hypertension, cancer, diabetes, and some of the other chronic diseases. This role is not clear-cut because nutrition research into these areas of health and well being has just begun. We are only beginning to understand some of the relationships between nutrition and chronic diseases.

Dietary Fats

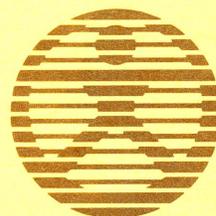
Dietary fats are the fats we see as well as some we do not see in the foods we eat everyday. They are necessary for the proper functioning of the body. But just like everything else, you

can get too much of a good thing. Too much fat, saturated as well as unsaturated, can lead to problems.

One of the major health consequences of too much fat in the diet is an intake of an excessive amount of calories. This leads to obesity. Obesity is probably the most common and one of the most serious nutritional problems affecting Americans today. It is considered a risk factor for developing cardiovascular diseases, hypertension, atherosclerosis, gallbladder disease, diabetes mellitus, and liver diseases. A risk factor is one contributing factor in the development of a chronic disease.

Dietary fat has been found to be a risk factor for developing coronary heart diseases and cancers of the colon, breast, and uterus.

HEART DISEASES: The leading cause of death in the western world is some form of coronary heart disease such as stroke and atherosclerosis. Heart attacks are rare for people in countries that have low-fat diets. When people from these countries



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move to the United States and their dietary habits become "Americanized," deaths from heart attacks increase.

Diet was implicated as a cause of coronary heart diseases over 20 years ago when blood cholesterol levels were found to be high in persons suffering from atherosclerosis (hardening of the arteries). Much research has been done to find the exact cause of this. Although we still do not have a total understanding of the relationship between diet and coronary heart disease, we can make the following statements:

- Hyperlipidemia, which is a high level of fat in the blood, greatly increases your chance of developing diseases of the heart and circulatory systems.
- The amounts and kinds of fat in the everyday diet influence the fat levels in the blood.
- A diet high in saturated fat and cholesterol can raise the level of cholesterol in your blood.
- A diet low in total fat, saturated fat, and cholesterol but with some polyunsaturated fat can lower the cholesterol level in your blood.

The cause of heart disease is not simple. There are many risk factors associated with its development. These include high blood cholesterol levels, high blood pressure, stress, smoking, obesity, and heredity.



CANCER: It has been estimated that about 60 percent of all cancer in women and 40 percent in men are related to diet and nutrition. However, we still know very little about the causes and prevention.

Both obesity and diabetes contribute to heart diseases.

Cancer of the colon and cancer of the breast are thought to be related to dietary fat consumption. Again, countries that have low-fat diets have low incidence of breast cancer and colon cancer. Researchers are not sure what type of fat causes or promotes growth of cancerous tissues.

DIABETES: Dietary fat, itself, has not been linked to the development of diabetes. However, a large number of diabetics are obese. And, one contributing factor in the development of obesity is a diet high in fat.

Today most people who become diabetic after they reach adulthood die prematurely of cardiovascular diseases. Dietary fat is definitely a risk factor in the development of cardiovascular diseases.

What can you do?

As a good health measure, most of us should reduce the total amount of fat we eat. Select foods that are lower in fat such as poultry or fish in place of fatty red meat; use nonfat milk in place of whole milk. Trim visible fat from meat, poultry, and fish. And reduce the use of fat during food preparation by roasting or broiling meats and steaming vegetables rather than frying.

Also, replace some saturated fats with polyunsaturated fats. Saturated fats are usually solid animal fats; polyunsaturated fats are primarily liquid vegetable oils. Most foods, however, contain a combination of both saturated and polyunsaturated fatty acids. Select those that are higher in the polyunsaturated fatty acids such as chicken rather than beef.

Many people should eat less food that is high in cholesterol. Cholesterol is a fat-like compound that our bodies make. Animals also manu-

facture cholesterol in their bodies, so it is in meats and foods of animal origin. Plants do not contain cholesterol since they do not make it.

TABLE 1. FAT AND FATTY ACID CONTENT OF SELECTED FOODS.

Food	Approximate Fatty Acid Composition (as percentage of total fat*)		
	Total Fat (Grams)	Total Saturated Percentage	Total Polyun- saturated Percentage
Beef chuck, 3 ounces, roasted	31	41	5
Pork loin, 3 ounces, baked	24	36	7
Peanuts, ¼ cup, roasted	18	19	30
Whole milk, 1 cup	8.5	54	-
Corn oil, 1 teaspoon	5	13	58
Lard, 1 teaspoon	5	40	12
Chicken, dark meat, no skin; 3 ounces, baked	5	27	24
Lowfat milk, 1 cup	5	3	-
Corn oil margarine, 1 teaspoon	4	62	4
Chicken, white meat, no skin; 3 ounces, baked	2	32	31

* Percentages may not equal 100 since only saturated and polyunsaturated fatty acids are given.

TABLE 2. CHOLESTEROL CONTENT OF SELECTED FOODS.

Food	Milligrams of Cholesterol (approximate)
Liver, 3 ounces	370
Egg yolk, 1 large	250
Shrimp, ½ cup	85
Turkey, dark meat, 3 ounces	85
Beef, 3 ounces	80
Pork, 3 ounces	75
Turkey, white meat, 3 ounces	65
Butter, 1 tablespoon	35
Whole milk, 1 cup	35
Lowfat milk or buttermilk, 1 cup	5

Sodium

Most Americans like salt - a lot of it! The average adult in the United States consumes the equivalent of from 6 to 18 grams (1½ to 2½ teaspoons) of table salt a day. This amounts to about 5 to 15 pounds for each person per year. The average person needs less than 3 grams a day.

Table salt is made of two minerals: sodium and chloride. Sodium is needed by the body to help control fluid balance and to maintain proper pressure within the cells. In addition, sodium helps transmit nerve impulses so muscles can work.

HYPERTENSION: Twenty percent of the adult population and 40 percent of older Americans have hypertension. Hypertension is another risk factor in cardiovascular disease. Research indicates that a moderate reduction in sodium intake might help in reducing hypertension for some people.



... 40 percent
of older Americans
have hypertension.

What Can You Do?

Most of the sodium in our diets is added to foods in the form of salt. Other sources of sodium in foods include baking soda, baking powder, soy sauce, monosodium glutamate, and seasoning mixtures such as lemon pepper and garlic salt. Processed foods high in sodium include cured meats (such as corned beef, hot dogs, sausage, and bacon), brined foods (such as olives, pickles, and sauerkraut), and salted snack foods. Convenience foods such as instant puddings and instant cereals contain sodium compounds. And sodium is a natural ingredient in some foods, including cheese and shellfish. Some medications, such as antacids, also contain sodium.

You can reduce sodium in the diet by limiting the amount of salt you add to food at home and by limiting consumption of processed foods high in sodium. Some people will need to make additional dietary adjustments. Persons with high blood pressure should consult their physician for recommended dietary restrictions of sodium.

People who exercise strenuously in hot weather may need supplements to replace sodium lost in perspiration. However, additional sodium is not needed unless a great deal of water is lost through perspiration.

TABLE 3. SODIUM CONTENT OF SELECTED FOODS.

Food	Milligrams of Sodium (approximate)
Salt, 1 teaspoon	2000
Baking soda, 1 teaspoon	1230
Baking powder, 1 teaspoon	300
Bread, 1 slice	200
Bacon, 2 slices	170
Snap beans, ½ cup, commercially canned	125
Milk, 1 cup	120
Egg, 1 medium	70
Beef, 3 ounces	50
Snap beans, ½ cup, fresh	3

Sugar

Sugars, as well as starches, are carbohydrates. Carbohydrates are one of the three classes of nutrients that provide calories, or energy, from the foods we eat. About 15 to 20 percent of a typical American's calories comes from sugar. This adds up to 80 to 100 pounds of sugar a year.

Recently sugar has been singled out as an "enemy" of good health. Unfortunately much is still unknown about the impact of sugar consumption on health.

OBESITY: Sugar has been blamed for one of the major health problems in our country - obesity.

Although sugar often contributes to the problem, it is not the sole cause. Obesity is a complex problem and results when a person eats more calories than is needed by the body. No particular food is fattening by itself. It is the sum total of calories from all foods eaten that counts.

DIABETES: For many years sugar has been blamed for causing diabetes. We know that diabetes is inherited, but we don't know what triggers it. However, it is true that obesity is related to diabetes; therefore, sugar may be indirectly related through its relationship with obesity.

HEART DISEASES: Both obesity and diabetes contribute to heart diseases. An excessive dietary intake of sugar contributes to obesity. But sugar, itself, is not directly linked to heart diseases.



*Essentially,
all dental disease
is preventable.*



TOOTH DECAY: Poor dental health is one of the most widespread and costly diseases directly related to nutrition in the United States. Over 98 percent of the people in this country have decayed teeth. Essentially, all dental disease is preventable.

Tooth decay starts with plaque, a sticky, colorless film of bacteria. Certain bacteria in the plaque make acids from the sugar that sticks to your teeth. The acids dissolve the enamel of the tooth which allows bacteria in to decay the tooth.

The problem is not simply the amount of sugar eaten. Of equal importance are the frequency of eating sugar-rich foods, the length of time the sugar stays in the mouth, and the stickiness of the sugar.

What Can You Do?

Much of the sugar we eat is "hidden" in foods. Soft drinks are high in sugar; so are many cereal and bakery products.

TABLE 4. SUGAR CONTENT OF SELECTED FOODS.

Food	Sugar Percentage (approximate)
Cane or beet sugar	100
Candies	55 to 99
Dried fruits	75 to 90
Honey	80
Syrups	75
Jams and jellies	65 to 70
Graham crackers	20
Pineapple, fresh	10
Carrots	10
Apples, fresh	5

Dietary Fiber

Dietary fiber, or roughage, is the part of plants that is not broken down in the digestive tract. Rather than being a single, uniform substance, fiber is a group of several related carbohydrate materials found in plants.

Fiber aids the movement of waste products through the intestine by absorbing and holding water. This makes the waste soft and less compact so it will move more easily.

The benefits of fiber have recently been praised by many people. Articles promoting high-fiber diets have appeared in magazines, and cookbooks featuring foods high in fiber are now popular.

DIGESTIVE DISEASES: In the early 1970's several British investigators awakened the interest in fiber. They observed a lower incidence

of appendicitis, diverticulosis, and cancer of the colon in the developing countries than in western countries. After comparing the diets, they concluded that the lower fiber intake of western countries was related to the development of these digestive diseases.

Nutritionists agree that fiber can be useful in treating constipation and diverticular disease, but there is considerable disagreement on whether fiber has any value in preventing these disorders. Research is continuing on the possible role of dietary fiber in reducing blood cholesterol levels and prevention of such disorders as hemorrhoids, colon-rectal cancer, obesity, and many others.

What Can You Do?

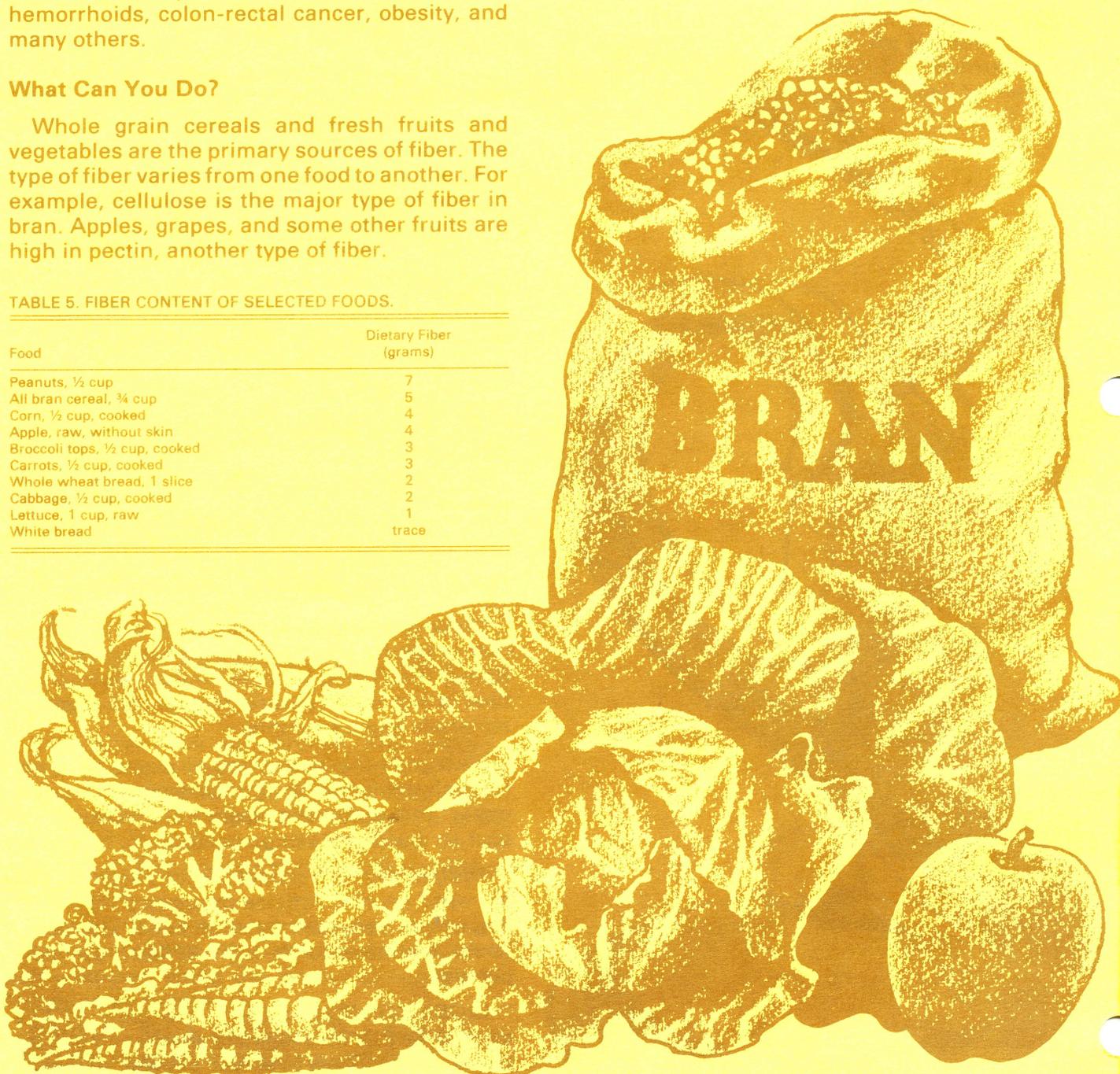
Whole grain cereals and fresh fruits and vegetables are the primary sources of fiber. The type of fiber varies from one food to another. For example, cellulose is the major type of fiber in bran. Apples, grapes, and some other fruits are high in pectin, another type of fiber.

TABLE 5. FIBER CONTENT OF SELECTED FOODS.

Food	Dietary Fiber (grams)
Peanuts, ½ cup	7
All bran cereal, ¾ cup	5
Corn, ½ cup, cooked	4
Apple, raw, without skin	4
Broccoli tops, ½ cup, cooked	3
Carrots, ½ cup, cooked	3
Whole wheat bread, 1 slice	2
Cabbage, ½ cup, cooked	2
Lettuce, 1 cup, raw	1
White bread	trace

Summary

To maximize your health, eat a varied diet and keep your body weight normal by exercising and eating nutritious but limited-calorie foods. A good diet includes a variety of fruits and vegetables, enriched and whole grain breads and cereals, milk and dairy products, meat and other protein foods. The amounts of fat, salt, and sugar in the diet should not be excessive. Be sure to include sources of polyunsaturated fats and dietary fiber.



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