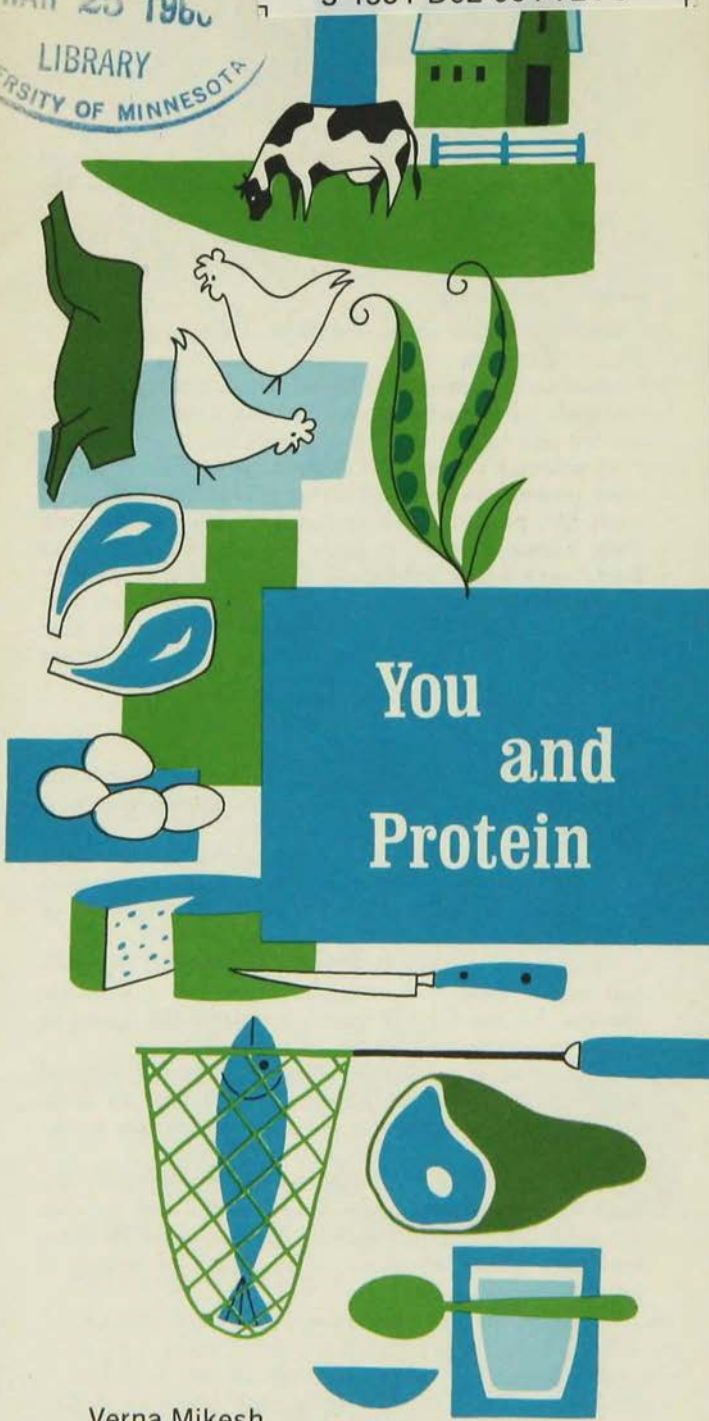


MN 2000 E 209

ST. PAUL CHA
MAR 25 1966
LIBRARY
UNIVERSITY OF MINNESOTA

UNIVERSITY OF MINNESOTA
3 1951 D02 064 721 J



You and Protein

Verna Mikesh

UNIVERSITY OF MINNESOTA

AGRICULTURAL EXTENSION SERVICE

2

This archival publication may not reflect current scientific knowledge or recommendations.
Current information available from University of Minnesota Extension: <http://www.extension.umn.edu>

You and Protein

Proteins Work for You

You see a superb package of proteins when you look in a mirror. All that shows, and much that doesn't, is made up of protein—muscles, skin, hair, nails, eyes, blood, heart, lungs, brain, nerves, and all the rest of you. Next to water, protein is the most plentiful substance in your body.

Proteins Build and Repair Your Body Tissues

Just as a house is built of many bricks or other materials, your body is made of many cells. Proteins are the materials used to build cells.

You need proteins throughout your life. Children need proteins to grow into strong, healthy adults. In adult life, proteins work to repair constantly changing body tissues. Proteins in body tissues are not there as fixed, unchanging substances deposited for a lifetime of use. Some tissues are always breaking down and others are being built to replace them. So your diet must always supply protein, even when you no longer need it for growth.

Proteins Operate Your Body at Top Efficiency

Proteins help you use other nutrients in your body. Enzymes, hormones, and hemoglobin are made of protein. You also get energy from protein.

Much as you use matches to light a fire, enzymes are used inside your body to start chemical reactions that make food nutrients available to various parts of your body.

Hormones regulate body processes such as digestion and use of food. For example, thyroxine, a hormone secreted by the thyroid gland, regulates the speed at which your body uses food.

Hemoglobin, a 95-percent protein substance found in your blood, carries oxygen from lungs to body tissues, and brings carbon dioxide from tissues to the lungs.

Proteins, like sugars, starches, and fats, supply energy to operate your body. When sugars and starches are available for energy they spare protein for its other functions. However, if no other source of energy is present, protein is used.

Proteins Protect Your Body

Some proteins in your blood are defenders. They help you develop resistance and, sometimes, immunity to diseases. Gamma globulin, a protein in the blood, can make antibodies that fight disease bacteria and viruses. A certain antibody is necessary for protection against each disease. Once you have had a disease, such as measles, this antibody forms and stays in your blood. It protects you from having the disease again or makes the next case less severe.

There Are Many Kinds of Proteins

During digestion food proteins break down into simpler units called amino acids. These amino acids are then regrouped into many different proteins inside your body. There are 22 different amino acids. Your body can manufacture all but eight that you must eat readymade in your food each day. Complete proteins contain all eight essential amino acids; incomplete proteins lack one or more of these acids. They are valuable foods, however, because their lack can be supplemented with complete proteins.

You Need Protein Each Day

Your daily need of protein depends on your body size, rate of growth, and maintenance and repair requirements. The National Research Council has set up recommended amounts for good health in each age group. These amounts are given in grams. There are about 30 grams in an ounce and 8 ounces in a cup.

These Foods Give You Protein

You get complete proteins from animal foods such as meat, eggs, cheese, and milk. Peas, beans, and nuts have almost-complete proteins. Cereal products, important sources of incomplete proteins, can be combined with animal foods to give all the essential amino acids.

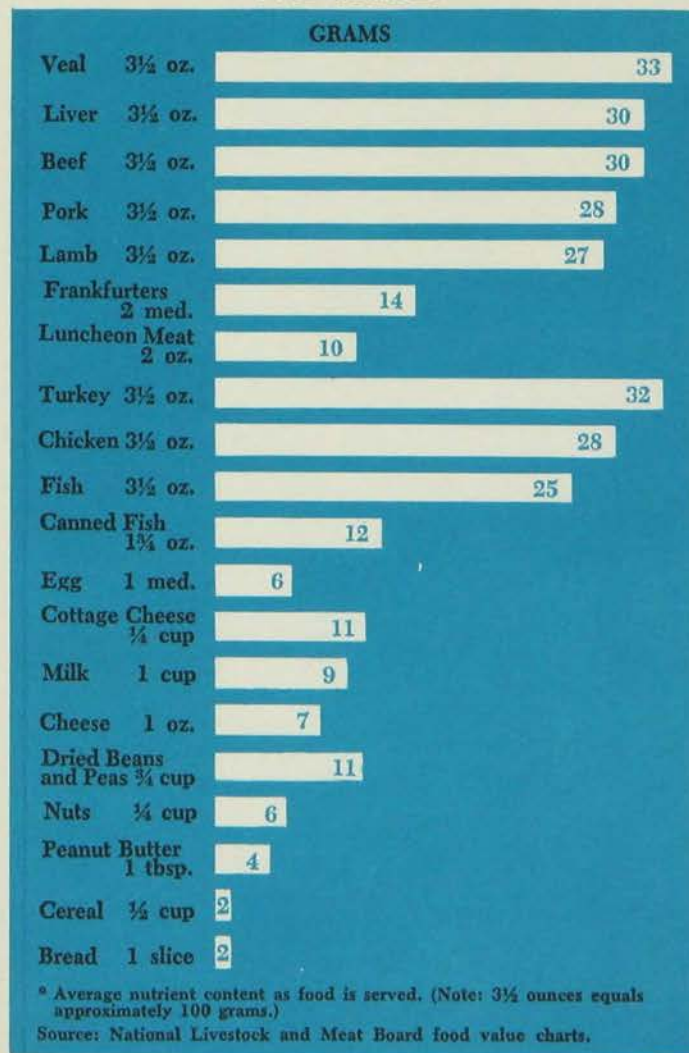
A variety of protein foods is important to good nutrition for people of every age. Extra servings are necessary for periods of growth, as childhood, adolescence, and pregnancy.

Always include a protein-rich food as the main dish in each meal. Milk, as a beverage, makes a valuable contribution to protein needs.

Recommended Daily Dietary Allowances for Protein

	Age, years	Weight, pounds	Height, inches	Protein, grams
Men	25	154	69	70
	45	154	69	70
	65	154	69	70
Women	25	128	64	58
	45	128	64	58
	65	128	64	58
	Pregnant Nursing (second half)			+20 +40
Children	1-3	27	34	32
	4-6	40	43	40
	7-9	60	51	52
	10-12	79	57	60
Boys	13-15	108	64	75
	16-19	139	69	85
Girls	13-15	108	63	62
	16-19	120	64	58

GOOD SOURCES*



PROTEIN FOR YOU



INFANTS

The physician will often advise meat for a baby and how much to give. Many canned baby meats are available, both plain and in combination with other foods. Sometimes meat might be put through a food grinder with vegetables. Feeding meats early has two advantages:

1. Nutrients are beneficial in building blood, muscles, bone, and other body tissues; the meat-fed baby is not as likely to gain excess weight.
2. Good food habits and an appreciation of a variety of foods are developed early.



TODDLERS

Children from 1 to 3 years are experiencing rapid growth and need generous amounts of protein. Ground or chopped meat is often preferred. Most toddlers enjoy crisp bacon. Canned meats packed especially for this age group are also available.



PRE-SCHOOLERS

Children from 3 to 5 years can gradually be introduced to new foods from the family table. Meat should be cut so it can be handled easily. Children in this age group should have a serving of protein-rich food at every meal.



SCHOOL CHILDREN, INCLUDING TEENAGERS

Appetites of boys and girls vary, but growth is taking place and bodybuilding materials are essential. Protein-rich foods are an important part of the diet and each meal should include a generous serving. Snacks, too, can frequently be high-protein foods such as hamburgers, pizza, and cheese.



ADULTS

As adults grow older they usually are less active and therefore need fewer calories. Their need for protein remains about the same as at age 25, so adequate amounts should be included in meals.



WOMEN, PREGNANT OR NURSING

Generous amounts of protein are essential to the health of both the mother and baby-to-be. Expectant mothers need at least two generous servings of protein each day. Teenage mothers-to-be, whose own bodies are still developing, must be especially careful to get an adequate diet. The need for all nutrients is greater while nursing, so extra servings of protein foods are desirable.

VERNA MIKESH is extension nutritionist, Agricultural Extension Service, University of Minnesota.

Issued in furtherance of cooperative extension work in agriculture and home economics, acts of May 8 and June 30, 1914, in cooperation with the U. S. Department of Agriculture. Luther J. Pickrel, Director of Agricultural Extension Service, University of Minnesota, St. Paul, Minnesota 55101.