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Put Protein in Your Diet

Cooperative Extension South Dakota State University

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What is the place of Protein in your diet?

Are you having trouble deciding what to believe about how to feed your family? If you want help to tell true facts from false, then read on!

Many people are busily swallowing food supplement pills (vitamins and minerals), thinking their food needs are taken care of. NOT SO! Science has shown the human body needs at least 50 different nutrients easily obtained from food. These can be grouped into six big classes. We must have certain amounts of each class each day:

- Proteins
- Fats
- Minerals
- Carbohydrates
- Vitamins
- Water

Notice any nutrients missing in the food supplement pills? Yes, you're right—at least four. Among them is PROTEIN, necessary for life itself.

EACH NUTRIENT HAS A JOB TO DO

Each nutrient has certain jobs to do which can't be done by other nutrients. Just as an extra pair of shoes cannot take the place of your coat, so it is with nutrients. An extra glass of orange juice, high in vitamin C, can't replace a glass of milk, rich in protein and calcium.

Protein has an important place in your diet. The word PROTEIN comes from a Greek word meaning First Place. There is no life without protein. It is made by living plant and animal cells.

PROTEINS WORK FOR YOU

Build and Repair Body Tissues

You look at a superb package of proteins when you see yourself in a mirror! All that shows, and much that doesn't, is made 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.

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.

Children need proteins to grow into strong, healthy adults. However, the need for proteins continues in adult life. Proteins work then to repair constantly changing body tissues. You see, 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. This is why your diet must supply enough protein even when you no longer need it for growth.

Operate 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 proteins.

- We use matches to light a fire. In a similar way enzymes are used inside the body to start chemical reactions which make food nutrients available to various parts of the body.
- Hormones regulate body processes such as digestion and use of food. Example: Thyroxine is a hormone secreted by the thyroid gland, which regulates the speed at which your body uses food.
- Hemoglobin is a substance, 95% protein, which is found in the blood. It carries oxygen from the lungs to body tissues and brings carbon dioxide from the tissues to the lungs.
- Proteins, like sugars, starches and fats, supply energy to operate the body. When sugars or starches are available for energy, they spare protein for its other functions. However, if no other source of energy is present, protein is used.

Protect the Body

Some proteins in the blood are defenders. They help us develop resistance and, sometimes, immunity to diseases. Gamma globulin, a protein in the blood, can make antibodies. These fight disease bacteria and viruses. A certain antibody is necessary for each disease. Once we have had a disease, as measles, this antibody forms and stays in the blood. It protects us from having measles 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 the body.

There are 22 different amino acids. We must eat eight of these ready-made in our food each day. The others can be made in body cells. A great variety of proteins can be made with many different combinations of amino acids. Complete proteins contain all eight essential amino acids. Incomplete proteins lack one or more of these acids.

HOW MUCH PROTEIN DO YOU NEED 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 of each age group. These amounts are given in grams. There are about 30 grams in an ounce and eight ounces in a cup.

You will find your family's daily protein needs on this chart:

<table>
<thead>
<tr>
<th></th>
<th>*grams 25</th>
<th>50</th>
<th>75</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child</td>
<td>40</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teenager</td>
<td>girl</td>
<td>58</td>
<td>85</td>
<td>boy</td>
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<tr>
<td>Man</td>
<td></td>
<td>70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woman</td>
<td></td>
<td>58</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pregnant Woman</td>
<td>pregnancy</td>
<td>78</td>
<td>98</td>
<td>Lactating</td>
</tr>
</tbody>
</table>

WHICH FOODS GIVE YOU PROTEIN?

We get complete proteins from animal foods 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, chosen from each Basic Four Food Group (see cover), is important to good nutrition for people of every age. Extra servings are necessary for periods of growth, as childhood, adolescence and pregnancy.

Meal Planning Tip: Always include a protein-rich food as the main dish in each meal. Milk as a beverage and breads also add protein to meals.

EACH OF THESE FOODS HAS 20-25 GRAMS PROTEIN

<table>
<thead>
<tr>
<th>COMPLETE PROTEINS</th>
<th>INCOMPLETE PROTEINS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEAT, FISH, POULTRY/POULTRY PRODUCTS</td>
<td>EGGS</td>
</tr>
<tr>
<td>CUPS</td>
<td>LARGE</td>
</tr>
<tr>
<td>MILK</td>
<td>1 CUP</td>
</tr>
<tr>
<td>CHEESE</td>
<td>1 LARGE</td>
</tr>
<tr>
<td>COTTAGE CHEESE</td>
<td>1 CUP</td>
</tr>
<tr>
<td>PEANUT BUTTER</td>
<td>1 CUP</td>
</tr>
<tr>
<td>CORN FLAKES</td>
<td>1 CUP</td>
</tr>
<tr>
<td>DRY BEANS</td>
<td>1 CUP</td>
</tr>
<tr>
<td>COW PEAS</td>
<td>1 CUP</td>
</tr>
<tr>
<td>BREAD</td>
<td>1 SLICE</td>
</tr>
</tbody>
</table>

From a variety of protein-rich foods you can easily find food your family likes to meet needs.