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FACT SHEET

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COST OF PROTEIN IN FOODS

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We depend on the meat and meat alternate group of foods as the major source of the essential nutrient protein. Protein builds and repairs body tissue. It is needed by every cell of the body. As children grow, their muscles are built from proteins. Adults need protein to repair muscle cells as well as other cells.

In a technical sense, the body's need is not really for protein, but for the building blocks of which protein is made. These blocks are called amino acids. The cells of the body use amino acids to build replicas of themselves in body tissues and to manufacture the hormones and enzymes that are key chemical tools of life.

Protein Provides Amino Acids

Food proteins provide amino acids for the making of body proteins and nitrogen and for making many other parts of tissues. The body is in a dynamic state, with proteins and other nitrogen-containing compounds being broken down and produced continuously. In fact, more protein is turned over daily within the body than is ordinarily consumed in the diet. Some of the amino acids released during the breakdown of tissue proteins are reutilized; but breakdown products of amino acids (urea, creatinine, uric acid and some other nitrogen-containing products) are excreted in urine. Nitrogen is also lost in feces, sweat and other body secretions and excretions and in sloughed skin, hair and nails. Therefore, amino acids and nitrogen are required continuously to replace these losses even after growth has ceased.

Amino acids consumed in excess of the amounts needed for making nitrogenous tissue constituents are not stored, but are rapidly broken down. The nitrogen is excreted as urea, and the organic acids left after removal of the nitrogen are used directly as a source of energy or are converted to carbohydrate or fat.

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The average amount of protein needed daily by older adult men is 56 grams. Adult women need 46 grams; children from 11 to 14 need 44 grams; teenage boys and young adult men need 54 grams; and teenage girls need 48 grams.

Protein is Expensive

Protein is generally the most expensive nutrient in the daily diet. The cost of protein in various meat group foods may be compared on the basis of protein needed daily based on the U.S. Recommended Daily Allowance (U.S. RDA). This is the amount of protein recommended for daily consumption for the average person by the Food and Drug Administration and used as a measure of protein for nutrient labeling. In these regulations, there is also a method to express the difference in quality between protein from animal sources and protein from vegetable sources. Foods that have nutrition labels tell how much of the U.S. RDA of protein is in each serving.

Table 1 presents the protein content of some meat group foods and relates them on the basis of the cost of the U.S. RDA. In other words — how much will it cost to buy enough of that food to supply 100 percent of the daily protein allowance? Actually, some protein is obtained from many other foods. The meat group foods are the major source, but it is not necessary to consume only these foods for all protein needs. The calculation of the cost of a U.S. RDA helps to make cost comparisons among different foods.

Compare current costs of meat group food protein by multiplying the quantity needed for a given food (column 2) by the price per pound for that food in your local market at any time. Review Table 2 and supply current prices to see the differences in cost of protein in these foods. This is especially important for people who watch their monthly food budget.

Make your own cost of protein comparison by recording the price per pound for the various foods from your supermarket in column 5. Then, multiply col-

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COST OF PROTEIN IN SELECTED FOODS

Various foods that provide protein.	Column 1 Protein in 1 pound of food (gm.)	Column 2 Quantity of food needed (pounds)	Column 3 Food price/ pound ($)	Column 4 Cost of U.S. RDA ($)	Column 5 Current food cost in your area ($)	Column 6 Current protein cost in your area ($)
Pinto beans (dry)*	104	.62	.28	.17		
Blackeye peas (dry)*	109	.60	.28	.17		
White beans (dry)*	101	.64	.35	.22		
Red beans (dry)*	102	.64	.39	.25		
Kidneys (beef)	70	.65	.40	.26		
Liver (beef)	90	.50	.85	.43		
Eggs	52	.87	.50	.44		
Peanut butter	116	.56	.80	.45		
Broilers, fresh (whole)	57	.79	.60	.47		
Whole turkey (young)	70	.65	.97	.63		
Boston butt — pork	75	.61	1.27	.77		
Hamburger (regular)	81	.56	1.40	.78		
Canned beans	26	2.50	.35	.88		
Hamburger (lean)	94	.48	1.90	.91		
Ham with bone	67	.67	1.37	.92		
Frankfurters	60	.75	1.25	.94		
Bologna	60	.75	1.25	.94		
Frozen perch fillets	88	.51	2.15	1.10		
Round steak	98	.46	2.50	1.15		
Rump roast	67	.67	2.00	1.34		
Corned beef	72	.63	2.19	1.38		
Flank steaks	98	.46	3.00	1.38		
Pork chops	61	.74	2.00	1.48		
Sirloin steak	75	.61	2.50	1.52		
Bacon	38	1.18	1.30	1.53		
Pork spare ribs	39	1.15	1.35	1.55		
Boneless ham	80	.56	3.50	1.96		
Club steak (boneless)	59	.76	2.90	2.20		

Column 1. Protein content in grams/pound of the edible portion of one pound of food as purchased. Reference: Agriculture Handbook No. 8, U.S.D.A., December 1963.

Column 2. The amount of the given food needed to supply the quantity of protein for the U.S. RDA, which is the daily need.

Column 3. These calculations take into account waste (bone, etc.) in purchased food. Food prices are in composite of those available in two Texas supermarkets in January 1979.

Column 4. Determined by multiplying quantity needed (Column 2) by food price (Column 3).

*Beans are measured dry for the table. When dry measures are cooked, they yield more than one pound.

Table 1. Use the information in the above table and current food costs to determine cost of protein.

umn 5 by column 2 to find the cost of a U.S. RDA of protein (column 6).

Of the many ways to obtain needed protein daily, balance is the most recommended method. Twelve ounces of club steak would provide one U.S. RDA of protein at a cost of approximately $2.20. To obtain total protein needs (100 percent of U.S. RDA) from pinto beans would require 10 ounces (of dry beans) at a cost of 17 cents. Table 2 lists small amounts of various foods which can be combined to obtain the daily U.S. RDA of protein at a cost less than that for steak but more than that for beans alone.

Food	Grams Protein Supplied	Cost
2 ounces peanut butter	15	$0.10
2 eggs	13	.13
3 ounces hamburger	15	.26
4 ounces hamburger	20	.35
3 ounces liver (beef)	17	.16
5 ounces chicken (broiler)	18	.19

Table 2. Cost comparison and protein content of various, relatively inexpensive protein sources to supplement protein supplied by low-cost, meat group foods.

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