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FACT SHEET

FOOD PROTEIN COST

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We depend on the meat and meat alternate food group as our major source of protein. Protein builds and repairs body tissue. Every body cell needs it. As children grow, their muscles are built from proteins. Adults need protein to repair muscle cells and 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 are called amino acids. The body cells 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.

Amino Acids

Food proteins provide amino acids to make body proteins and nitrogen and to make other parts of tissues. The body is in a dynamic state, with proteins and other compounds containing nitrogen 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 others) containing nitrogen are excreted in urine. Nitrogen is also lost in feces, sweat and other body secretions and excretions and in sloughed skin, hair and nails. Amino acids and nitrogen are required continuously to replace these losses even after growth is completed.

Excess amino acids are not stored, but are rapidly broken down. The nitrogen is excreted as urea, and the organic acids left are used directly as a source of energy or are converted to carbohydrate or fat.

The average amount of protein needed daily by adult men is 56 grams. Adult women need 45 grams; children from 11 to 14 need 34 grams; teenage boys and young adult men need 56 grams; and teenage girls need 46 grams as recommended by the revised Recommended Dietary Allowance (RDA).

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Expense

Protein is generally the most expensive nutrient in the daily diet. The cost of protein in meat group foods may be compared on the basis of protein needed daily based on the U.S. Recommended Daily Allowance (U.S. RDA) (Table 1). This is the daily amount of protein recommended for the average person by the Food and Drug Administration and used as a measure of protein for nutrient labeling. These regulations included the difference in quality between protein from animal sources and from vegetable sources. 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 enough of that food to supply 100 percent of the daily protein allowance cost? Actually, some protein is obtained from many other foods. Meat group foods are the major source, but are not the only foods meeting protein needs. The calculation of the cost of a U.S. RDA helps to compare overall food prices.

Compare current costs of meat group food protein by multiplying the quantity needed for a given food (column 2) by the prices per pound for that food in your local market. 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 protein cost comparison by recording the price per pound for the foods from your supermarket in column 5. Then, multiply column 5 by column 2 to find the cost of a U.S. RDA of protein (column 6). It is important to use the figures in column 4 only as a guide. Because of food price changes over time and in different areas, use your current prices.

Balance is the most recommended method of obtaining protein daily. Eleven ounces of club steak would provide one U.S. RDA of protein at a cost of approximately $2.75. To obtain total protein needs

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COST OF PROTEIN IN SELECTED FOODS

	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
Various foods that provide protein.	Protein in 1 pound of food (gm.)	Quantity of food needed (pounds)	Food price/ pound ($)	Cost of U.S. RDA ($)	Current food cost in your area ($)	Current protein cost in your area ($)
Pinto beans (dry)*	104	.62	.36	.22		
Pork liver	93	.48	.50	.24		
Blackeye peas (dry)*	109	.60	.47	.28		
White beans (dry)*	101	.64	.55	.35		
Kidneys (beef)	70	.65	.55	.35		
Red beans (dry)*	102	.64	.63	.40		
Broilers, fresh (whole)	57	.79	.55	.43		
Liver (beef)	90	.50	.95	.48		
Dry milk solids	162	.28	1.70	.48		
Broiler backs and necks	37	1.22	.40	.49		
Eggs	52	.87	.60	.52		
Whole turkey (young)	70	.65	.80	.52		
Cut-up broilers	57	.79	.70	.55		
Broiler gizzard	91	.49	1.20	.59		
Broiler liver	89	.51	1.20	.61		
Split broilers (halves)	57	.79	.80	.63		
Hamburger (regular)	81	.56	1.20	.67		
Whole milk	16	2.81	.25	.70		
Milk, 2%	19	2.37	.30	.71		
Cheese, American processed	105	.43	1.75	.75		
Broiler, breast	74	.61	1.30	.79		
Broiler thigh	62	.73	1.15	.84		
Broiler wing	41	1.10	.80	.88		
Hamburger (lean)	94	.48	1.90	.91		
Peanut butter	116	.56	1.75	.98		
Broiler drumstick	51	.88	1.15	1.01		
Frozen perch fillets	88	.51	2.00	1.02		
Cheddar cheese	113	.40	2.65	1.06		
Canned beans	26	2.50	.45	1.12		
Ground round	92	.46	2.50	1.15		
Ground chuck	85	.53	2.20	1.17		
Round steak (boneless)	92	.46	2.60	1.19		
Ham with bone	67	.67	2.00	1.34		
Frankfurters	60	.75	1.90	1.42		
Flank steaks	98	.46	3.50	1.61		
Pork spare ribs	39	1.15	1.50	1.72		
Rump roast (boneless)	79	.58	3.00	1.74		
Bologna	60	.75	2.40	1.80		
Sirloin steak (boneless)	77	.61	3.00	1.83		
Pork chops	61	.74	2.50	1.85		
Corn beef	72	.63	3.25	2.05		
Boneless ham	80	.56	4.00	2.24		
Bacon	38	1.18	2.00	2.36		
Club steak	65	.69	4.00	2.76		
T-Bone steak (with bone)	60	.75	3.80	2.85		

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

Column 2. The amount needed to supply the U.S. Recommended Daily Allowance of protein. The requirement is 45 grams of an animal-based food or 65 grams of a plant-based food, divided by its protein content.

Column 3. These calculations take into account waste (bone, and so forth) in purchased food. Food prices are a composite of those available in two Bryan, Texas supermarkets in January 1982.

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 1 pound.

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

Food	Grams Protein Supplied	Cost
2 ounces peanut butter	15	$0.22
2 eggs	13	.15
3 ounces hamburger (regular)	15	.22
4 ounces hamburger (regular)	20	.30
3 ounces liver (beef)	17	.18
5 ounces chicken (broiler)	18	.17

Table 2. Cost comparison and protein content of relatively inexpensive high protein content foods.

(100 percent of U.S. RDA) from pinto beans would require 10 ounces (of dry beans) at a cost of 23 cents. Table 2 lists small amounts of foods which can be combined to obtain the daily U.S. RDA of protein at a cost less than steak but more than that for beans alone.

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