Nutrient Units per Dollar

purchase of food by nutrient content per pound more efficient than by cost per pound

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Foods vary in nutritional value and in price and—when not controlled by taste preferences—their purchase usually is for nutrient content. But because most foods contain seven or more essential nutrients appraisal is difficult without some sort of guide.

The National Research Council has published the daily recommended allowances of nutrients for people in several classes of occupations. A 154-pound man at moderately active work requires daily 3,000 calories; 70 grams of protein; 1.0 gram of calcium; 5,000 I.U.—international units—of vitamin A; 75 mg.—milligram—of ascorbic acid; 1.5 mg. of thiamine; 1.8 mg. of riboflavin; and 15 mg. of niacin. Other nutrients are required by the human body but when the above requirements are fulfilled with a diet of mixed foods the minor nutrients will be supplied.

If these daily requirements are considered as nutrient units—3,000 calories as an energy nutrient unit, 70 grams of protein as a protein nutrient unit—the nutrient unit content of any one of the several hundreds of foods of known nutritional value, can be determined. As an example, the nutrient units of white potatoes may be tabulated thus:

Nutrient Units of White Potatoes

	Daily requirement	Nutrients per lb. as purchased	Nutrient units
Energy cal.	3,000.00	318.00	0.11
Protein g.	70.00	7.60	0.11
Calcium g.	1.00	0.04	0.04
Vitamin A (I.U.)	5,000.00	70.00	0.01
Thiamine mg.	1.50	0.40	0.27
Riboflavin mg.	1.80	0.15	0.08
Niacin mg.	15.00	4.40	0.30
Ascorbic acid mg.	75.00	64.00	0.86
Refuse %	....	16.00	...
Total			1.8

Not all foods are comparable since they are used in the diet to supply different nutrients and—for example—a unit of energy cannot replace a unit of protein. The United States Department of Agriculture has divided foods into seven different groups of basic foods and recommends for adequate nutrition that at least one food from each group be consumed daily. If this is done, other foods may be eaten according to taste selection. Foods are given as normally sold and many fresh foods are purchased which give some waste in preparation. The values have been reduced to take care of this waste. In a few cases the nutrient unit content is over 6.0 which indicates the food is relatively high in one or two nutrients characteristic of the food group. However, beef liver has 40 units of vitamin A and 8 of riboflavin.

Nutrient units of foods within one of the seven groups can be compared and by dividing the nutrient unit into the cost of a pound the cost per nutrient unit can be obtained as illustrated below:

Relative Cost of Nutrient Units per Pound

	Nutrient units per pound	Cost in cents per pound	Cost in cents per nutrient unit
Beef, round steak	3.3	81	24.6
Beef, chuck	3.1	49	15.8
Beef, hamburger	3.3	39	11.8
Beef, liver	56.6	59	1.1
Halibut	4.1	47	11.5
Pork, bacon	3.6	54	15.0
Chicken, brl.	4.0	64	16.0

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Nutrient Unit Content per Pound, as Purchased for Certain Foods in the Seven Essential Groups

The cost comparison per unit of nutrient should be made only between foods in the same group.

Group I

Leafy, Green and Yellow Vegetables, Raw, Cooked, Frozen, Canned.

Item	Nutrient units per pound
Asparagus	3.4
Beans, Lima (frozen)	2.8
Beans, snap, green	2.6
Beans, snap, green (canned)	1.1
Broccoli, sprouting	7.5
Carrots, bunch	7.6
Chard	5.1
Peas, green (in pod)	2.3
Peas (canned)	2.3
Peas (frozen)	4.1
Peppers	7.0
Spinach	11.2
Spinach (canned)	8.0
Squash, summer	2.0
Squash, winter	4.3
Turnip, greens	20.0

Group II

Citrus Fruit, Tomatoes, Raw Cabbage, other High Ascorbic Acid Foods.

Item	Nutrient units per pound
Cabbage, raw	2.8
Grapefruit	1.9
Grapefruit (juice)	2.4
Orange	2.7
Orange (juice, frozen, concentrated)	10.5
Tomato	2.6
Tomato (canned)	2.6
Tomato (juice)	2.5
Tomato (puree)	4.6

Group III

Potatoes and other Vegetables and Fruit. Raw, Cooked, Frozen, Canned, Dried.

Item	Nutrient units per pound
Apple	0.7
Apricots	3.4
Apricots (dried)	10.1
Banana	1.1
Blackberries	2.1
Cantaloupe	2.6
Cauliflower	2.4
Celery	0.7
Cherries	1.7
Corn, sweet	1.0
Corn (canned)	1.2
Cucumber	0.6
Figs (dried)	2.9
Grapes	0.7
Lettuce, head	1.1
Mushroom	3.1
Okra	3.3
Onions, mature	1.1
Peaches	1.6
Peaches (canned in syrup)	1.1
Pears	0.6
Pears (canned in syrup)	0.4
Pineapple (canned in syrup)	1.2
Pineapple (juice)	1.0
Plums	1.2
Potato	1.8
Potato (chips)	3.9
Prunes (dried)	3.3
Raisins	1.8
Sweet potato	8.1
Watermelon	0.6

Group IV

Milk, Cheese, Ice Cream.

Item	Nutrient units per pound
Buttermilk (cultured)	1.5
Cheese (cheddar)	7.9
Cottage cheese (skim milk)	2.7
Ice cream, plain	2.3
Milk (dry skim)	15.6
Milk (evaporated)	3.3
Milk, whole	1.7

Group V

Meat, Poultry, Fish, Eggs, Dried Beans and Peas, Nuts.

Item	Nutrient units per pound
Almonds, in shell	3.6
Beans (baked, tomato sauce)	1.3
Beans, kidney	5.9
Beans, lima	4.7
Beans, pea	6.0
Beef, chuck and bone	3.1
dried	4.8
hamburger	3.3
liver	56.6
round and bone	3.3
rump and bone	2.5
Chicken (broiler, ready to cook)	4.0
Chicken (roaster, ready to cook)	3.6
Cod, steaks	2.2
Eggs	3.0
Frankfurters	3.2
Halibut	4.1
Lamb, leg roast	3.5
rib chop	2.8
Lentils, whole	6.2
Peanut butter	8.5
Pork, bacon	3.6
ham (cured) bone	4.8
loin	4.7
Salmon (canned)	5.1
Swordfish	6.0
Tuna (canned)	5.8
Turkey	3.3

Group VI

Bread, Flour and Cereals.

Item	Nutrient units per pound
Biscuits (enriched)	3.9
Boston brown bread (enriched)	3.0
Bread, enriched cracked wheat	3.3
Bread, white	1.9
Bread, white, enriched	3.0
Bread, whole wheat	3.5
Corn bread, whole grain	2.7
Corn meal, unbolted	3.7
Crackers, graham	2.9
Crackers, soda	2.0
Macaroni (unenriched)	2.5
Oatmeal (dry)	4.2
Pancake (mix) enriched	6.1
Rice, brown	3.7
Rice, white	1.9
Soy bean flour (low fat)	9.6
Spaghetti, unenriched	2.5
Sugar, granulated	0.6
Wheat, whole grain, hard spring	4.9
Wheat flour (whole)	4.8
Wheat flour, cake or pastry	1.5
Wheat flour, white enriched, all purpose	4.4
Wheat, puffed, enriched	3.6
Wheat, shredded	3.7

Group VII

Butter and Margarine.

Item	Nutrient units per pound
Butter	4.3
Margarine (fortified)	4.2