

STUDY ON THE NUTRITIVAL VALUE OF FOOD PRODUCTS

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ABSTRACT: *Food is a voluntary and conscious process, and therefore educational. It depends on a free decision of the individual. That's why adherence to healthier eating habits based on nutritious eating requires a deep conviction. Food is undoubtedly the habit that most influences people's health. It is not for nothing the habit of eating that repeats itself most constantly throughout our lives. Dr. Oseler, the renowned Canadian physician, said that 90% of all conditions, except infections and accidents, are closely related to nutrition. In the contemporary era, the great diversity of available foods, their complex chemical composition, the risks of illness through ingested foods, the change of environment in which man carries out his activity, have led to a revision of the concept of human nutrition, the emphasis of its rational character and preventive factor in health. The responsibility of those who market food has been stressed both in terms of the nutritional value of the products marketed and especially their state of innocuity.*

KEYWORDS: *Food, nutritional value, individual.*

1. INTRODUCTION

The food consists of a mixture of organic and anorga-nice substances. This mixture contains substances necessary for the human body, but also indifferent substances and even antinutrient substances. According to their role in metabolism, the useful substances in food, necessary for the human body (trophins), are divided into several groups:

- substances with an energetic role, which by oxidation in the body provides the necessary caloric energy for vital processes and energy expenses due to professional activity. Such substances are mainly lipids and carbohydrates;
- plastic substances, cell and tissue regenerators, such as protides;
- catalytic substances such as vitamins and mineral elements;
- sensory substances that impress the senses.

In the scientific literature in the fields of biochemistry and food hygiene, food technology and merceology, the nutritional value is often

presented in the form of the percentage chemical composition, highlighting the presence of some or others of the trophins or sometimes accompanied by the energy potential expressed in kcal/100g produced. For a food, nutritional value (with its four sides) is the major criterion in assessing quality. Thus, the quality of food goods, regarded as the degree of satisfaction of a consumer need by a material correspondent manufactured for this purpose, is exposed both to the high requirements of the risk-free metabolism of existing nutrients and to the sensory or technical requirements.

The evolution of the concept of nutritional value has been slow, but it has been systematically based on concrete and rigorously defined notions, which have allowed in modern merceology the concept of nutritional value to appear in a broadened form, comprising four inextricable dimensions: psychosensory value, energy value, biological value and hygienic value (Figure 1), having a major role in assessing the quality of products



Figure 1. Nutritional value of food

Building on the new concept of nutritional value, nutritional experts have concluded that a proper diet, an optimal diet, must comply with four essential laws: the law of quantity, the law of quality, the law of balance and the law of adequacy.

- A. The law of quantity involves the correlation of the amount of food ingested with the needs of the body, to cover the needs of growth or maintenance and energy consumption in different activities.
- B. The quality law implies a complete and varied diet in its composition, so as to provide the body with all the necessary substances:

carbohydrates, lipids, proteins, vitamins, mineral elements, etc.

- C. The law of balance implies the preservation of the correct proportions between the quantities of the various substances that are part of the food consumed, as follows:
 - carbohydrates to cover 55 – 65% of the daily energy needs;
 - lipids cover 25 to 35% of daily energy requirements;
 - proteins cover 10 to 15% of daily energy requirements;
- D. The law of adequacy requires that the choice, preparation and quantity of food be closely correlated and adapted to the

weight, age, physiological state and type of activity performed.

Moreover, the Food and Agriculture Organization – FAO – recently produced and distributed a set of educational materials related to nutrition, materials that can facilitate and develop models of practical diets.

METHODOLOGY OF THE DETERMINATION OF THE NUTRITIVE VALUE OF FOODS

On the plane international level, nutritional balance should be considered to target energy intake (distribution of caloric sources by types of nutrients), protide intake, lipid intake, hydromineral intake; vitamin intake. In essential lines, this nutritional balance is presented below. Relative to daily energy requirements, proteins should provide 13-16% of total calories, with higher percentages expected for children and adolescents. The main place belongs to animal proteins (30% in adults, 60% in adolescents, over 85% in children) due to its content in essential amino acids. This ensures the harmonious growth of children and young people, the restoration of the adult body following physiological wear and maintenance of resistance to disease. Of the total caloric quantity, lipids must have a weight of 25-35%, the highest percentages being provided for children. Structurally, the need for lipids depends on age. For the adult population, about half of the total is to be of plant origin, and for adolescents and children animal products (milk, dairy products, butter) reach up to 85% of the total. This covers the body's energy needs and ensures the prophylaxis of chronic degenerative diseases. Carbohydrates, with a share of 50-60% of total calories, are required in significant proportions in all population groups to cover energy needs. This share also reflects some

food skills specific to the population of our country with regard to grain derivatives. The steps of the method for determining the coverage are as follows:

1 calculation of the average chemical composition of a unit of product (100 grams or a portion of n grams)

2. calculation of the total quantity of: protides $P = \sum niPxi$; carbohydrates $G = \sum niGxi$; lipids $L = \sum niLxi$

Where:

P = the total amount of protides;

G = total quantity of carbohydrates;

L = total amount of lipids;

xi = components of the recipe.

3. calculation of the energy value by summarising the energy released by burning the trofins assimilated by the human body::

$$Q_n = P * 4,1 * K_p + L * 9,3 * K_L + G * 4,1 * K_G,$$

Where:

Q_n = energy value;

K_p, K_L, K_G = assimilation coefficients of protides, lipids and carbohydrates respectively;

4,1 kcal/g = caloric coefficient of protides and carbohydrates;

9,3 kcal/g = caloric coefficient of lipids.

4. Establishing the coverage of energy needs (GQ) by reporting the energy value to the energy needs of the reference type:

$$G_Q = (Q_n / \text{energy requirements}) * 100;$$

In the model, the organic acids in food are ignored, given their random frequency in consumption. Similarly, ethyl alcohol is also abstracted, which has an optional frequency in the diet. In order to check the proportion between the main trofins, it is possible to calculate separately the coverage of the energy requirements for each of them, as follows:

- the coverage of the protides: $GP = (P / \text{required protides}) * 100;$

- lipid coverage: $GL=(P / \text{lipid requirement}) * 100$;

- coverage for carbohydrates: $GC=(P / \text{required carbohydrates}) * 100$.

Knowledge of nutritional value, quantification of its sides is, in addition to a

decisive criterion in the assessment of the quality of food, a premise that allows a better correlation of supply with demand for goods, thus ensuring their success on the market.

VEGETABLES						
Food	Protein g%	Carbohydrates g%	Lipids g%	Water %	Calories	
Red Peppers	1.3	7.3	0.4	90.2	39	
Green Peppers	1.1	4.6...4.8	0.2	92.7	25	
Potatoes	1.8..2.1	19.1	3.0		89	
New Potatoes	1.7	17.4	0.2	82.5	80	
Cucumber	1.3	2.9	0.2		19	
Dry Onion	1.3...1.5	9.4...10.5	0.1...0.2	87.6	45...51	
Mushrooms	4.8...5.0	2.5...3.0	0.2...0.5	88.4	33...35	
Cauliflower	2.5...2.8	3.9...4.6	0.3...1.3	91.6	30...32	
Corn	3,9	22,4	1,3	-	117	
Winter Radishes	1.3	4.9	0.1		26	
Moon Radishes	0...0.6	3.8...4	0.1		16...19	
Green Salad	1.4...1.9	1.9...2.9	0.3	94.2	16...22	
Red Beet	1.3...1.8	8...9	0.1		34...43	
Spinach	2.3...3.5	1.8...2	0.3	90.1	20...25	
Asparagus	2	2.6	0.2		21	
Stevie	4.6	-	-	-	-	
Nettles	5.5...7.9	1.1...7.1	0.7		58...68	
FRUIT						
Food	Protein g%	Carbohydrates g%	Lipids g%	Calories	Water %	Organic acids
Cranberries	0...0.8	12.1...15		56...60	66...84	0.6
Agri	1.3	9.5		48		0.4
Pineapple	0.4	11.9		52	85	0.2
Bananas	1...1.3	13.4..20		66...84	75	0.6
Apricots	0.9...1.1	11.1...15		54...64	85	0.2
Peaches	0.8...0.9	12.4...14.2		56...65	83	0.1
Oranges	0.8	10.1...11.5		47...53	87	0.2
Plums	0.6...0.8	16.8...20		74...80	78	0.1
Grapes	0.8...2.1	18...20		80...100	81...100	1...1.7
Cherry	1...1.2	13.6...15		64...66	85	0.5
Raspberry	1.4	7...13.6		40...67		0.6

DAIRY					
Food Milk Cream (20...30%)	Protein g%	Carbohydrates g%	Lipids g%	Water %	Calories
Burdof Cheese	25,,28	0,,0.5	28	39	337,,377
Cow Cheese (Fat)	13	4.5	9	70	156
Cow Cheese (weak)	10..27	4	1,,1.2	75	84,,97
Cheese	22,,25	0,,1	19,,30	50	283...382
Yogurt	3.3,,4.5	3.3,,4	0.1,,4.5	90...92	30,,52
Milk Beaten	3.5...3.6	3.9...4.6	1.0...3.6	88	43...64
Milk Cow	27	40	24		498
Cream (20...30%)	2.7,,3	3,,3.5	20,,34	63...71	204,,340
Butter	8.0	2.5	80,,84	9.5	787,,806

FLOUR					
Food	Protein g%	Carbohydrates g%	Lipids g%	Water %	Calories
Arpacas	0.5..10	72...75	1.5		338...348
Biscuits	7.5...10	72...74	9.5...10	6	337...430
Corns, buns	10.7	53.5	0.6		269
Wheat flour	10.7...12	68...74.7	1...1.4		347...357
Corn flour	9.6	72.1	1.7		351
Oatmeal	13.6	65.3	6.3		382
Wheat	12	68.7	2		348
Gris	9.4...11.2	73.3...75.9	0..0.8		340...354
Mălai	9.6...10	71.7...75	0...1		348...362
Rice	7.5...8	76...77	0.5...1		345...351
White Wheat Bread	8...10.3	50...54	1...2	32	248...282
Rye Pasta	7.8	47.5	1.3	40	239
Without Egg Pasta	5...5.6...9.6	75...76	1	11...12	360
With Egg Pasta	10...11.8	79.1...80	2...2.2	11...12	366...378
Corns	9.4	69.4	4.1		362

MEAT					
Food	Protein g%	Carbohydrates g%	Lipids g%	Water %	Calories
Deer	20	0	1.9	76	100
Turkey	23...24	0.5	8.5	65.8	178...179
Turkey (fat)	20.4	0...0.5	15.3		227
Chicken (fat)	19	0	9.5	70	167
Sheep (fat)	17	0	28	54	331
Pig	18...22.4	0...5.4	6.3...10	72	143...170
The duck	19...19.6	0.4	6	75	136...140

MEAT PRODUCTS

Food	Protein g%	Carbohydrates g%	Lipids g%	Water %	Calories
Brain	10	0...2	9		125
Pork liver	19	3	6	72	146
Beef liver	20	4	5	72	130...146
Dry salami	26.5	0	43.4		510
Hello Cow	20	0	16.1		234
Smoked bacon	10	0	74		729
EGGS					
Food	Protein g%	Carbohydrates g%	Lipids g%	Water %	Calories
Chicken egg white	13	0.5	0.2	86	57
Yolk	16	0.3	32	52	364
Chicken egg (50g)	6.5...7	0.3	6	72	83...85
Duck egg (60g)	7	0.2	8		102
FAT					
Food	Protein g%	Carbohydrates g%	Lipids g%	Water %	Calories
Sheep and cattle tallow	0.3	0	99.4	0.3	927
Cream (20 ... 30%)	2.5...3.5	2.3...3.1	20...30		213...299
Sunflower oil	0...0.3	0	99.4...99.9	0.1	925...929
Soybean oil	0	0	99.8	0.2	928
Butter	8	2.5	80		806
Goose	0.5	0	99	0.3	923
Lard Lard	0.2...0.5	0	99...99.6	0.2	925...928

CONCLUSIONS

The main dietary substances are: proteins, carbohydrates, vitamins and mineral salts. Carbohydrates, fats and proteins are extremely important because of their plastic function and stimulating vital functions and should not be absent from the diet. Plastic role also have fats that form deposits under the skin or in various organs. Mineral salts also have a plastic role, with calcium participating in bone formation, and iron in hemoglobin synthesis.

Milk and cheese are part of the first group and are a valuable source of calcium and

vitamins, and are particularly necessary for children to be used. development of organism at the age of growth and to strengthen resistance to unfavorable conditions. Milk is necessary but not enough, it is poor in some elements (iron, copper, manganese), while fatty cheeses, consumed in large quantities, favor hypercholesterolemia. The second group includes meat, including fish. Meat is rich in valuable proteins and iron and plays an important role in growing. Stimulates upper nervous activity. The eggs are in group III. Contains high biological value proteins, name-red vitamins in large quantities and quality fats. The yolk contains 2% cholesterol. In group IV are vegetables and

fruits, they are the main source of vitamin C, containing carbohydrates, mineral substances and a large amount of various aromatic substances. I can't cover the energy needs, being very low in protein. These extremely valuable foods cannot alone cover the nutritional needs of the human body.

Group V belongs to cereals and dried legumes, which are the most important energy source due to the carbohydrates they contain. They are also an important source of vitamins in group B and C. Vegetable proteins present in cereals and dried legumes are qualitatively inferior to animal proteins. Sugary products (sweets) are in group VI. They are an excellent energy source that is released quickly during exertion. They do not contain vitamins, and the abuse of sweets causes nutrition disorders. Consumed between meals or before bedtime promotes tooth decay. Group VII is fat. Their caloric value is very high. They are in the cold season and those who put in sustained physical exertion. Fats expose to obese people. Animal fats, unlike vegetable fats, are hypercholesterolemic.

Group VII belongs to the drinks. Water has the main role. It should be consumed in 1 1/2 – 2 liters/day. Alcohol has no nutritional value and is never necessary for the body. Coffee has stimulating action

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