

## ANTHROPO-MEDICAL PERSPECTIVES ON CONTEMPORARY NUTRITION

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Do we eat to live, or do we live to eat? There is a fundamental ambivalence in our relationship with food: food is both a health-protective agent in the long run and a vector of diseases.

Numerous clinical and epidemiological data accumulated in recent years suggest the essential role of nutrition in determining chronic non-communicable diseases (metabolic, cardiovascular, certain cancers). Nutritional factors are currently considered, beyond infectious agents, as decisive determinants of the disease.

Migration, rising living standards, food availability, and food technology associated with an evolution of our tastes, but particularly probably due to the efforts of advertisers to promote particular products, have profoundly changed our eating habits.

Nowadays, the question of the ratio between the quantity and quality of food available for consumption and their distribution worldwide is increasingly prominent. There is a trend towards high levels of refined fats and carbohydrates, but with low fiber content. Presumably, these changes in the structure of consumption had a significant metabolic response in inducing modern pathology.

Ignoring or superficially addressing the issue of nutrition, as well as associating an unhealthy diet with a sedentary lifestyle, alcohol, and tobacco consumption can be real health threats.

Educating the population during the first years of school for understanding and adoption of a healthy lifestyle, along with the training of health teachers, could contribute to improving the health of the population and streamlining the medical system.

*Keywords:* nutrition, eating behavior, obesity.

### INTRODUCTION

*Eating* – a physiological obligation, a social activity, or a pleasure of the senses? Do we eat out of necessity, give in to the sin of craving, or cultivate the joys of gastronomy?

Food has never been just food, and its meanings are not just about physical survival, as being particularly embedded in social relationships. In his famous gastronomic essay, *La psychologie du gout*, Brillat-Savarin stated: “Tell me what you eat and I’ll tell you who you are.”

The act of “feeding” is a psychosocial event with deep roots in human history. The food itself has a spiritual connotation related to the socio-cultural characteristics of the environment in which we live<sup>1</sup>. What we choose to eat, as well as how we prepare and serve it, are factors deeply affected by our cultural transmission.

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For anyone unfamiliar with food anthropology, the academic interest in food might seem odd since food is part of everyday life, everyone eats, we are biologically programmed to eat to survive, and that is why food is considered an existential fact. But food is more than a source of energy, it involves all five senses and we cannot escape the cultural experience of the senses. All living things must consume food to survive, but only humans create specific cultural meanings, symbols and in this way biological processes become social processes. No food can be consumed without involving social and cultural values and practices. All people eat, but what they eat, how they eat, with whom, why, in what contexts, how they procure it, all these are marked by cultural or historical differences.

Food contributes to the creation of one’s own identity and is a factor of social integration. By eating, man integrates himself into a cultural space.

Food is only one among other aspects of cultural traditions, but it is probably one of the most persistent. There is no cultural group and no individual for whom there is not at least one specific food whose taste or smell does not evoke a memory.

In today's society, the vast majority of people no longer have as their only motivation for food consumption the satisfaction of nutritional needs, but also the provision of pleasure. Food is a source of pleasure, comfort and safety. It is a symbol of hospitality, social status and religious importance.

Do tastes cause cultural changes or does culture cause changes in "natural" preferences? Probably both, but we have no clue of how representations can be "mapped" into sensations, about what "link is missing" between physico-chemical structure, sensation, and representation<sup>2</sup>. The problem of adapting to human needs and desires is posed in an extremely acute way in the contemporary industrial and urban societies of the western world. In this part of the world, nutritional problems are related to excesses, rather than deficiencies, leading to new types of pathologies. It seems, one might say, that our food preferences, "our tastes" are incapable of giving us any good, reasonable indication as to what *we should* decide to *eat* and, above all, *when we should stop* eating.

A quick look at diets indicates the (curious) fact that people do not eat only what is available, but what is considered edible. It is interesting how some people decide to eat insects, snakes, frogs or snails and others to reject meat (pork, in the case of Muslims or in general, in the case of vegetarians). This attitude of acceptance or rejection is partly determined by the environment or what is available and is widely influenced by culture and the pure-impure, sacred-profane, good-evil dichotomies. In this way we can understand food taboos, we can understand how social values, beliefs, and practices influence what they eat and what people think about food, but also how food reflects or influences other aspects of culture.

The omnivorous paradox is a kind of "double bond." Thus, on the one hand, we have what is called *neophobia* (fear of the new), conservatism and on the other hand *neophilia* (desire for everything that is new; tendency to unforeseen change), curiosity about potential new foods. It is said that "familiarity selects content", but at the same time, we do not appreciate excessive repetition and monotony. The danger we fear today is no longer biological damage, food rot, but rather

the chemical additives used and over-processing. Refined foods, which we longed for until recently, are currently rejected for nutritional reasons (white sugar = "empty calories") and/or symbolic (refined foods are "artificial" or "dead"). White, the color of the '60s (white sugar, white bread, white veal, white kitchens like laboratories, white blouses in supermarkets, etc.) is no longer valued. The time has come for black bread, brown sugar, gray flour, pink veal<sup>2</sup>.

The study of human nutrition entered the field of scientific inquiry rather late, although, since ancient times, various connections have been established between food and pathology. Thus, Hippocrates (460-377 BC) determined 500 years BC that food has a particular role in the prevention and treatment of disease, combating the ancient Egyptian doctrines promoted by the followers of Pythagoras, that food "is the source of all evil." "If we succeed – said Hippocrates – in finding for each man the balance between diet and exercise, so that it is neither more nor less, we have succeeded in discovering the means of maintaining health." Thus, 2500 years ago, the basic principles of rational nutrition promoted by contemporary nutrition are clearly expressed. However, until the end of the eighteenth century, any idea of food had no real scientific basis. The considerable advances in chemistry in the nineteenth century also lead to the development of food chemistry. There are food classifications, notions about their composition in proteins, carbohydrates, lipids, mineral salts, and water. Starting with the 20<sup>th</sup> century, studies on non-calorific elements in food (Na, K, S, Mg, P, Ca, etc.) and microelements (Co, Zn, Cr, Fe, Cu, I, etc.) and especially the discovery of vitamins, eclipses all the acquisitions of the first half of the twentieth century in the field of nutrition<sup>3</sup>.

Holistic research on eating behavior and its consequences on the health of the individual has become a research topic only very recently, partly because it requires various knowledge of medicine, psychology, sociology, anthropology, economics, statistics.

There was no universally valid diet for all describable hominid species. Instead, the diets varied depending on the geographical area, climate, specific ecological niche. However, there are universal features of the pre-agricultural hominid food consumption useful in understanding how the current "Western" diet can predispose modern populations to chronic diseases<sup>4</sup>. The analysis of Paleolithic diets<sup>5,6</sup> showed that carbo-

hydrates, provided by fruits and vegetables rather than cereals, covered 50% of the caloric needs. Currently, the primary source of carbohydrates consists of sweets and highly processed cereal products. During a year, Paleolithic man consumed over 100 different species of fruits, vegetables, roots, which provided more than 100 grams fiber daily, as well as the need for vitamins and minerals. Today, few people consume the recommended amount of fruits and vegetables, and when they do, they use a limited number of them. The Paleolithic reconstituted diet contained more protein and less fat compared to the current “Western” diet.

Nowadays, the question of the ratio between the quantity and quality of food available for consumption and their distribution worldwide is increasingly prominent. Although there are 30,000 species available worldwide, a census would list only 7,000 used, of which only 120 are widely used. Moreover, only nine species currently provide 75% of human nutritional needs (wheat, rice, corn, barley, millet, potatoes, soybeans, sweet potatoes, sugar beets).

It has been estimated that that 100,000 generations of people lived in the prehistoric culture of hunting and harvesting, 500 generations were dependent on agriculture, 10 generations lived in the industrial age, and only 2 generations grew up with hyper-processed fast food<sup>7</sup>.

It is highly challenging to assess the complexity of human nutrition, which includes hundreds of foods and nutrients. Isolated analysis of nutrients or foods underestimates the potential interactions between food components and disease risk. In this context, food must be considered as a whole by identifying the food typologies whose objective is to evaluate the profile of food consumption. We do not eat individualized nutrients but consume a variety of foods, with complex combinations of nutrients whose effects are supposed to be interactive or synergistic<sup>8</sup>. The analysis of food typologies could prove to be a powerful, informative means in improving the understanding of the role of food in the production of chronic diseases. Complementary studies are needed to assess the validity of food typologies and their ability to predict disease risk in different populations<sup>8,9</sup>.

OCA (*L'observatoire des consommations alimentaires/The food consumption observatory*) and CREDOC (Centre de Recherche pour l'Étude et l'Observation des Conditions de Vie/Center for Research for the Study and Observation of Living

Conditions) in France, proposed a typology of eating behavior, following the analysis of food consumed by people over the age of 18 years, over a period of 7 days. The answers allowed to distinguish 6 typologies of food consumption:

*Type 1:* those who eat little and diversified – characterized by low energy intake and high consumption of fruits and vegetables. The prevalence of obesity is low. It consists mainly of women under 45 years.

*Type 2:* those who eat a lot and diversified – important energy intake and a varied diet. Obesity and overweight are common. Men aged 25–54 predominate.

*Type 3:* standard consumers – no special options. The eating habits of this group can be included in the traditional diet. Overweight is common. Retirees predominate, both men and women.

*Type 4:* the young consumer (18-34 years). They especially choose sweet biscuits, rice, pasta, chocolate, and carbonated drinks.

*Type 5:* those who eat little and in a hurry – limited food diversity. Generally, young women (> 70%).

*Type 6:* those who eat a lot and monotonous – low food diversity, high alcohol consumption, excessive intake (by monotonous diet) of cheese, sausages, potatoes, meat, and coffee. Overweight and obesity are common. Group constituted of > 90% of middle-aged men (25–54 years)<sup>10</sup>.

Dietary changes over time are due to certain social factors that make the diet more dependent on geographical factors. Geographical conditions largely determine fauna and flora as well as basic, fundamental economic opportunities.

The globalization of food preferences is taking place in parallel with the changing environment. Alongside the expansion of fast food (often considered synonymous with globalization), there is an expansion of Asian, African, Latin American, and other international cuisines within the national ones. A growing, global food market means that a vast network of producers, suppliers, sellers, and consumers can be exposed to shocks and changes related to changing consumer preferences. Concern for the health risks of certain foods can trigger rapid changes in demand, which in turn can lead to financial disasters (mad cow, swine fever, bird flu)<sup>11</sup>.

The evolution of eating behaviors has now become a real fashionable topic. The transformation of the European “food landscape” accelerated at the end of the twentieth century, principally

under the influence of profound changes in society. Migration, rising living standards, food availability, and food technology associated with an evolution of our tastes, but particularly probably due to the efforts of advertisers to promote particular products, have profoundly changed our eating habits.

The food we eat is different from what it used to be. It is estimated that currently, the percentage of calories covered by carbohydrates has decreased significantly from 60–70% to 50–60% in our country and to 40–50% in some industrialized countries such as the USA, Great Britain, France, Sweden. This percentage decrease in carbohydrate consumption was due to the increase in animal proteins and lipids<sup>12</sup>. The quality of meat proteins and fats has been radically altered due to the aberrant diet with which these animals are raised. The main changes in lipids in the diet of modern man could be summarized as follows:

- a) increasing the percentage of calories from lipids, from 20–30% in the last century to 30–45% today. This increase was determined by the distinctive taste qualities of high-fat foods. As fats (especially animal fats) are more expensive than other foods, the increase in their consumption has been in parallel with the rise in the economic potential of society. Within the same society, the “rich” almost invariably secured higher lipid consumption than the “poor” and this explains why in some studies done in developed capitalist countries plasma cholesterol was found among the “rich” about 60 mg/dl higher than that found among the “poor”;
- b) increasing the percentage of animal lipids compared to vegetable lipids from 40% to 70–80%. In this way there was a decrease in the intake of polyunsaturated fatty acids (antiatherogenic) and an increase in saturated (atherogenic);
- c) increasing the consumption of refined lipid products, both from vegetable source (oils) and from animals (butter, fatty cheese, cream)<sup>12</sup>.

Numerous clinical and epidemiological data accumulated in recent years suggest the essential role of nutrition in determining chronic non-communicable diseases (metabolic, cardiovascular, certain cancers). After the infectious agents, nutritional factors are currently considered the major determinants of disease. Until recently, the

scientist’s position on this pathology was contemplative.

Doctors are increasingly convinced that the eating habits adopted in the last 100 years in Western Europe have contributed to the increase in the frequency of heart disease, hypertension, and certain forms of cancer. The influence of diet on the state of health was felt at the beginning of the last century and it was practically unprecedented in populations that lived in the wild, with a diet similar to that of our ancestors in the pre-agricultural period<sup>1</sup>.

As early as the 18th century, Montesquieu, one of the most complex and prominent figures of the French Enlightenment, stated: “La médecine change avec la cuisine/Medicine changes with cooking”. Changes in food and human life impact health status. With each evolutionary stage, the man passed from a passive dependence on the environment in which he lived to an increasingly marked action on it. The technologization and urbanization brought by the industrial revolution – through food processing, the large (quantitative) supply of food, the disruption of traditional nutritional landmarks, the progressive diminution of the daily physical effort level - led humanity to the current obesity pandemic, with all its consequences (diabetes, CV disease, dyslipidemia, various forms of cancer). Currently, the most common cause of the disease is related to lifestyle and human nutrition. Contemporary man consumes in excess foods rich in animal fats, sweets, meals low in vegetables. The consequences are obesity, increased blood fat levels, prolonged hyperglycemia, and the appearance of a series of sufferings that alter the quality of life and shorten human existence.

For example, it is estimated that in England, the consumption of refined fats and carbohydrates per capita has increased 5–10 times over the last two centuries, while the consumption of whole grains has declined substantially. The long-term health effects of a diet high in fat (especially saturated) and sugar, but deficient in complex carbohydrates, the main source of fiber, have become apparent only in recent decades. Dietary changes that have occurred in the West over 200 years are now condensed into a few decades in developing countries<sup>13</sup>.

Because the diet is multidimensional and influenced by biological, psychological, social, and cultural factors, the diet-disease relationship requires methods that have adequate specificity in

describing foods and quantifying nutrient intake. However, there is no perfect method for assessing eating behavior.

The burden of chronic diseases is growing rapidly. In 2001, these accounted for 59% of the world's 56.5 million deaths and were responsible for 46% of morbidity<sup>14</sup>.

According to the IOTF (International Obesity Task Force), more than 2.5 million deaths a year are due to high body mass index values, which is expected to double by 2030.

The WHO considers obesity to be *one of today's most blatantly visible – yet most neglected – public health problems* countries are facing in both the northern and southern hemispheres.

Long considered a symbol of health and abundance, obesity is redefined as a disease in the context of current knowledge.

The prevalence of obesity has increased almost three times compared to 1979. In 2016, 39% of the adults worldwide (aged 18 years and over) were overweight, 650 million being obese. It is estimated that by 2030, 60% of the world's population will be overweight/obese, if current trends continue<sup>15,16</sup>.

A cohort study (Framingham Heart Study) conducted in the USA between 1971–2003 on 12067 repeatedly evaluated subjects showed that the chances of becoming obese increase by 57% if the person has an obese friend, by 40% if a relative becomes obese, and by 37% if the partner becomes obese.

There has also been a staggering increase in the number of overweight and obese children. About 30% of European children are overweight, and almost ¼ of them are obese<sup>17</sup>. In adolescents, this rate is even more alarming because it has tripled since 1980, reaching in their case from 5% to 16% as it is today.

In the US, the obesity epidemic has quickly become the most challenging public health issue. The National Health and Nutrition Examination Surveys have shown that the percentage of overweight or obese adults has increased from 55.9% in 1988 to 64.5% in 1999–2000. During the same period, the percentage of overweight adolescents increased from 10.5% to 15.5%<sup>18,19</sup>. Results from the 2013–2014 National Health and Nutrition Examination Survey (NHANES), indicate that an estimated 17.2% of U.S. children and adolescents aged 2–19 years are obese and another 16.2% are overweight<sup>20</sup>.

The US Department of Agriculture, Economic Research Service, indicated that most of the

consumers appreciate foods high in fat and sugar, refined wheat products (biscuits, pasta, white bread). Many Americans are eating too much. Frozen potatoes (mostly frozen french fries) and potato chips account for a quarter of all vegetables eaten. Fluid milk intake decreased between 1970 and 2000 by 24%, while that of cheese increased (for example, the consumption of mozzarella cheese increased by 365%!). Consumption of soft drinks, fruit juices, cakes, biscuits, ice-cream increased between 1980 and 2000 by 22%, representing approximately 31 teaspoons extra sugar/day per person<sup>18,19</sup>.

After the economic transition of the late 1980s and early 1990s, there was a rapid increase in overweight and obesity in many Eastern European countries. Despite economic variations and political strategies and cultural and social differences among these nations, the economic, political, and social changes have contributed with varying intensities and durations to major changes in lifestyle, diet, eating habits. These changes have contributed to significant effects on human biology, including rising levels of chronic disease, overweight, obesity, and mortality.

Obesity, which affects a large part of Western countries, has begun to make victims among the Romanians. The PREDATORR epidemiological study showed that in Romania, 31.4% of adults aged between 20 and 79 are obese. Also, 34.6% are overweight and only a fine line separates them from obesity. Of these, only four million have been diagnosed by specialists, and only 8,000 are receiving treatment<sup>21</sup>.

Consumers are undoubtedly responsible for what they eat and how much they eat, but many studies have shown that individuals find it difficult to withstand food availability and large portions<sup>22</sup>. Regardless of whether the subjects were normal weight or obese, the continuous presence of food on the plate stimulated food intake in increased quantities than usual. More tasty dishes, a friendly atmosphere, and alcohol consumption can also increase energy intake.

According to a report carried out by a food company, half of Europeans are obese or overweight but do not consider this to be a crucial health issue. Europeans see obesity as a problem, but it affects others, not themselves. Out of 15 diseases considered dangerous, obesity and overweight ranked fifth and ninth, respectively. The first on the list were cancer and heart disease<sup>23</sup>.

Other possible factors involved in obesity include multiple nutritional deficiencies, organ dysfunctions, addictions, depression, exhaustion. People eat for many reasons: for fun, for comfort, as a substitute for sex or anything else. Living in a state of depression contributes, in the case of some individuals, to obesity through dependence on certain foods that bring them relief. This observation is based on the idea that unhappy people eat more to feel better.

One of the consequences of excessive consumption of refined products, with high caloric density, is the misleading of energy intake control mechanisms, which over the millennia have been “programmed” based on a certain value of the volume/calorie ratio of food, which currently no longer correspond to the initial situation. It seems that one of the main factors that explain the high frequency of obesity in the modern era is the change in the volume/calorie ratio existing in precisely those foods that are consumed in large quantities. Food surveys of a large number of obese people have shown that one of the main characteristics of the diet of these patients is the small volume of foods with high caloric density, which, apart from not inducing satiety, trigger an excessive appetite. This appetite is due to the hypoglycemic reaction, caused by insulin hypersecretion, produced as a result of the brutal stimulation of the pancreatic-secretory apparatus by concentrated carbohydrates<sup>12</sup>.

In Europe, overweight and obesity are responsible for 80% of cases of type 2 diabetes, 35% of cases of ischemic heart disease, and 55% of cases of hypertension in adults.

The important consequences of obesity are not limited to hypertension, hyperlipidemia with increased risk for coronary heart disease, hyperinsulinemia (precursor of type 2 diabetes), osteoarthritis, and the risk for several cancers. There are other, lesser-known, consequences of obesity; it is about reducing the lifespan and fat load of the liver. Obesity at the age of 40 was associated with a 7-year decrease in life expectancy in women and a 6-year decrease in men<sup>24</sup>.

Obesity must be recognized not only as a risk factor for other pathology but as a pathology in itself, which endangers already fragile health systems.

Over 6% of health expenditure in the European region is allocated to obese adults (direct costs). To these, other indirect costs are added (due to medical leave, premature death, retirement due to

these medical causes, decreased productivity), which are at least twice as high. We must not forget how this disease and its comorbidities affect the quality of personal and social life<sup>25</sup>.

There is another epidemic that threatens to be just as damaging to communities everywhere. The WHO has announced that “an epidemic of diabetes is about to occur” (WHO, 2002). In fact, it is more rigorously considered a pandemic, as type 2 diabetes is becoming a major global health problem<sup>26</sup>. In 2019, there were 463 million people with type 2 diabetes. It is estimated that by 2045, there will be 700.2 million. This is probably the most serious medical problem associated with the worldwide adoption of the “Western” diet and lifestyles described above. It is particularly worrying because diabetes is a debilitating chronic disease and has high long-term costs for the budgets of the medical system, for families and individuals.

After heart and circulatory diseases, cancer is the most common cause of death. According to the WHO, in Western countries, 30% of cancers are due to dietary factors. There is a close relationship between eating habits and cancer. The proportion of cancers can spectacularly change over time. For example, for most populations in developed countries, stomach cancer has declined rapidly in recent decades, while the proportion of colon, breast, and prostate cancers has increased. Also, the incidence of cancers has changed rapidly in developing countries as the population has aged, and these countries have become increasingly industrialized and urbanized. These variations related to migration and urbanization indicate that the percentages of various types of cancer are strongly influenced by environmental factors, especially diets, and that the risk of cancer could be greatly reduced<sup>27</sup>.

We often believe that food is a risk factor for cancer only insofar as it contains contaminating carcinogens. In fact, the role of food and nutrition in altering carcinogenesis is much more complex. The presence or absence in the diet of protective factors is, it seems, equally important. Those living in southern Europe are less likely to develop bowel cancer than those in the north because they regularly eat fruits and vegetables that contain vitamin C, which can prevent the formation of this type of tumor.

Recent research conducted in rural areas of our country indicates an alarming increase in CV diseases, mental illness, and TB. About 50% of the

total number of investigated children and young people had an IQ <60. This result could be linked to poor nutrition, hypovitaminosis, and lack of minerals and trace elements, which are to be found mainly in animal proteins. Medical reports received from most recruitment centers in the country reveal the frequency of CV, digestive, and neuropsychiatric disorders. The 20-year-olds developed ulcers due to the poor material conditions in which they live. Besides, due to the stress generated by the uncertainty of living conditions, these young people developed heart and behavioral disorders<sup>1</sup>.

## CONCLUSIONS

In general, it is difficult to predict whether globalization will lead to a homogenization of food, consumption, and nutrition due to the influence of global pressure or to a diversification that could result in a heterogenization of food and the nutritional system [11].

Although lifestyle optimization is the most effective method from a medical and psycho-social point of view in both the prevention and treatment of metabolic disorders, the results of various educational interventions are unsatisfactory. Insufficient professional training for a multidimensional approach (medical-psycho-social), as well as the low interest of the population for a healthy lifestyle, create a vicious circle. According to specialists, ignoring or superficially addressing the issue of nutrition, as well as associating an unhealthy diet with a sedentary lifestyle, alcohol, and tobacco consumption can be real health threats.

Educating the population during the first years of school for understanding and adoption of a healthy lifestyle, along with the training of health teachers, could contribute to improving the health of the population and streamlining the medical system.

Each of us has several times a day the opportunity to choose a life full of health or a life full of diseases.

Each person must appeal to the decision-making power at his disposal and decide again on the way he wants to live.

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