

Alternative nutrition (1. LF, NT)

The term **alternative nutrition** has no clear definition. It encompasses a wide range of diets that differ from our normal diet or the diet recommended by official experts. Motivations for choosing alternative diets vary: to live healthier, to lose weight, not to kill animals and not to eat their meat (killing is a sin, animals have a right to life).

The narrower the spectrum of "allowed" foods in a particular alternative diet, the less suitable the alternative is. Conversely, the broader the spectrum of foods consumed, the less likely it is that a nutrient will be deficient or excessive. If the alternative direction allows a sufficiently wide range of foods, it tends to be adequate in terms of nutrient intake. However, it may have other shortcomings, such as the distribution of food throughout the day (Diamond diet).

Nutritional guidelines

The following table explains some dietary guidelines.

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Classification of nutritional direction	Specifications'
Semi-vegetarianism	A semi-vegetarian does not eliminate meat from the diet completely. He occasionally eats poultry or fish.
Pescetarianism	Pescetarianism excludes almost all meat from the diet, with the exception of fish and seafood.
Lacto-ovo-vegetarianism	A lacto-ovo-vegetarian eliminates all meat and meat products from the diet. As the name implies, eggs and dairy products are part of the diet.
Lacto-vegetarianism	A lacto-vegetarian does not consume any meat or eggs. Lacto- in the name expresses that milk and dairy products are part of the diet.
Ovo-vegetarianism	Ovo - a vegetarian also does not consume any meat, and excludes dairy products. He does, however, keep eggs in his diet.
Veganism	Vegan does not include any foods or products of animal origin in his/her diet.
Frutarianism (Fruitarianism)	Frutarians include only plant foods in their diet, which they do not cook. It is a diet based mainly on fresh or dried fruits and nuts. The more strict Frutarians do not eat fruit that has been picked or plucked from the ground, but only fallen pieces.
Vitarianism (Raw diet)	Vitarians consume only plant foods that are not cooked. The maximum temperature to which they heat these foods is 42°C.

Vegetarianism

Pythagoras (6th century BC) is considered the founder of vegetarianism. The main types of vegetarianism are:

- **Semi-vegetarians'** - do not eat red meat, but poultry and fish. They are not considered true vegetarians.
- **Lacto-ovo-vegetarians'** - do not eat meat, consume milk, dairy products and eggs.
- **Lacto-vegetarians'** - do not eat meat and eggs, consume milk and dairy products.
- **Vegans'** - do not consume any animal foods.
- **Frutarians'** - they eat only fruits and some vegetables (e.g. tomato or cucumber are fruits).
- **Vitarians'** - consume only raw plant food in an attempt to return to the original way of eating.



The first three **less strict vegetarian diets'** have a higher fibre content of some vitamins and minerals compared to the conventional diet. Due to the higher proportion of vegetables and fruits in the diet, they contain less saturated fats and in turn contain more unsaturated fatty acids. These guidelines are a way to maintain a reasonable weight, lower blood cholesterol levels, and promote intestinal peristalsis due to their higher fiber content. As long as the setting of total energy needs and macronutrients are set up adequately to the needs of the individual, these diets are adequate. The food choices meet the general principles of nutrition in the prevention of cardiovascular disease, cancer and sugar. A vegetarian lifestyle also corresponds to a lower incidence of risky behaviours such as drinking alcohol or smoking. Other vegetarian trends (veganism, frutarianism, vitarianism) belong to *very restrictive and strict trends* which are not suitable for groups such as children, adolescents, pregnant and breastfeeding women, geriatric individuals. These groups need a varied and balanced diet. Vegan diets are unsuitable for these groups mainly because of their low fat content, vegetable sources of protein and low energy density (amount of energy per unit volume). Large quantities must be consumed to meet energy needs, which is a major problem, especially for young children. The most publicized deficiency of these diets is **deficiency of vitamin B₁₂'**, which leads to anemia and neurological disorders. Vitamin B₁₂ is found **only in foods of animal origin'**; for vegans, its only sources are bacteria in the lower part of the small intestine and certain types of

bacteria in the diet. Vegan mothers have low levels of vitamin B₁₂ in their breast milk, and the risk group is again children. A healthy adult is not at risk of vitamin B₁₂ deficiency, and this is mainly due to the very small daily requirement (1 microgram) of vitamin B₁₂ stored in the body, which can cover the daily requirement for about 6 years. Another disadvantage of a vegan diet is the **low content of vitamin D**, which is mainly found in foods of animal origin. Deficiency of vitamin D can lead to calcipital rickets in young children and osteodystrophy in adults. **Deficiency of Iron and Zinc** is a risk for all vegans, in terms of the lack of animal products in the diet. Above all, the absorption of iron is linked to its source. Iron is absorbed much more efficiently from animal sources, compared to plant sources (cereals, soya), where iron absorption is hindered by phytic acid, which forms insoluble compounds with iron. **'Vitamin C**, of which vegans usually have more, in turn promotes iron absorption. **Two thirds of zinc is usually taken from animal foods'**, in addition to which its absorption is hindered by phytic acid and fibre. Plant foods also contain **less calcium** than milk and dairy products. Calcium absorption is hindered by high intakes of fibre, phytic acid and oxalic acid. Low levels have been shown in vegan children and adolescents.

Macrobiotics

Macrobiotics, which is not only a way of eating but also a philosophy, was founded after World War II by **Japanese George Oshawa'** (1893-1966); his most famous student is Michio Kushi (born 1926). Macrobiotics divides food into **yin foods** (spices, sugar, liquids, oil, fruits, dairy products, some vegetables), **yang foods** (fish, meat, eggs, salt), and **harmonious foods** (cereals, legumes, some vegetables; rice is considered the most harmonious food). The aim is to create harmony in the body, so foods in the yin and yang groups are restricted and harmonious foods should predominate. The macrobiotic diet has several stages - from relatively mild, which has some of the positive characteristics of less strict vegetarian diets, to the most strict, where one eats only paddy rice, which macrobioticians claim the body creates all the necessary nutrients from by *biological transmutation*, which is contrary to scientific knowledge. **The risk of nutrient deficiencies** is greater for strict dietary levels and for groups with increased nutritional requirements (children, pregnant women). Similar to vegan diets, macrobiotic diets have a **low energy density** due to their low fat content, which can lead to malnutrition in children. Low intake of vitamin D, vitamin C, folic acid, riboflavin, vitamin B₁₂. Calcium and iron intake in macrobiotics is below recommended levels and although levels of both elements are said to be normal in people on a macrobiotic diet, some indicators of Fe supply (total binding capacity, haematocrit) are low. Macrobioticians explain the origin of all diseases by a disturbance of the yin and yang forces in the body, reject drugs and surgery, and believe that a diet that restores this balance can cure all sorts of diseases, including cancer, which has not been confirmed by research to date.



Organic diet

Eating organic food or organic food, i.e. food that has been grown without the use of artificial fertilizers, pesticides, herbicides and is not industrially processed, is also considered an alternative way of eating. In recent years, organic food has been widely promoted in this country and there are indications of its increased consumption in some other EU countries. **Organic farming, however, cannot provide a living for the entire population:** without inorganic fertilisers, not enough food would be produced and without the use of pesticides, a significant part of the crop would be destroyed (under the current state of pesticide use, it is estimated that pests destroy 30% of the crop).

Atkins diet

The basis of the diet is the **theory** that overweight people consume **too many carbohydrates'**. The amount of carbohydrates increases insulin production, and this leads to weight gain and hunger. By reducing the intake of sugars and increasing the amount of fat and protein in the diet, the body is much better able to burn excess fat storage. In order to obtain energy, the body must burn fat when carbohydrates (which are the main source of energy in the diet) are in short supply. The burning of fat produces ketones, a source of energy. In ketosis, there is also less feeling of hunger. So the body starts using fat, including storage fat, as its primary, main source of energy and sexual skill instead of carbohydrates. **Dr. Robert C. Atkins**, the author of the diet, claims that his recommendations will not only help to reduce weight, but also improve memory, cardiovascular health and overall health. Atkins first described the Atkins diet in his best-selling book, *Atkins' New Revolutionary Diet*, in 1970, and the diet achieved enormous popularity after a new edition in 1996. In the Atkins diet, the **ratio of major nutrients is significantly violated**: one is allowed to eat essentially only foods containing protein and fat. Carbohydrates are limited to 20 g/day (20 g of carbohydrates in 1/2 slice of bread or in 130-200 g of fruit or 250-500 g of vegetables) for the first 2 weeks, then no more than 40 g/day. Atkins recommends taking vitamin supplements because the allowed **fruit and vegetable intake is minimal**. Diets with excess protein and saturated fat are considered unhealthy by the vast majority of nutrition organisations and doctors. The U.S. Academy of Sciences recommends *a minimum of 120 g of carbohydrate per day* (our recommended carbohydrate intake is about 350 g) and has declared the Atkins diet *potentially dangerous and ultimately ineffective*. *Carbohydrate deficiency can cause problems. The brain needs glucose as a quick energy source; it takes longer to get energy by converting it from fats and proteins. More muscle mass is lost than fat. The mild, beneficial ketosis that results from fat burning can lead to life-threatening conditions, known to occur in diabetics and people on long-term fasting, according to Atkins. High fat intake raises blood fat and cholesterol levels and increases the risk of cardiovascular disease. A lack of vegetables, fruits and whole grains results in deficiencies in vitamins and other*

antioxidants, minerals and fibre. *Glycogen, a storage carbohydrate in the liver, binds water (1 g of glycogen about 3 g of water). Weight loss is due to the fact that when glycogen is consumed in a carbohydrate-deficient diet, water is also lost with the glycogen, causing weight loss.*

Shared meals

The concept of the split diet was created in the 1930s by **Dr. William Hay** and is very popular in our country thanks to the books of Lenka Kořínková. According to Dr. Hay, the current consumption of high-protein and *high-carbohydrate foods prevents their perfect digestion*. Both of these groups can only be consumed simultaneously with neutral foods. Hay's followers often differ in the ordering of certain foods in each group, and the ordering sometimes does not look very logical. For example, fruit with an average protein content of 0.5 % is placed in both the *protein* and *carbohydrate* groups (5-15 % carbohydrate), and cheese is placed in both the *neutral* and *protein* groups. It can also be argued that the enzymes in the small intestine simultaneously break down proteins, fats and carbohydrates and **there is never a separate digestion of nutrients**. Also, breast milk contains all the major nutrients and the principle of separation does not work here. A split diet is not risky in terms of nutritional status. If people lose weight after it, it is probably because they eat less when separating food groups than if they ate combined meals as they were used to.

Diet by blood groups

The creator of the concept of the blood group diet is **Dr. Peter J. D. Adamo** (born 1956) The concept is based on the assumption that **there is an immunological reaction between blood and digested food**, and therefore each blood group is suited to slightly different foods depending on what people were eating at the time the blood group was created. Blood group O (*old - old*) **is said to be the oldest, having originated when man was a hunter, A (agrarian - agricultural) originated when hunters became farmers, B (balance - balance) originated from the mixing of races originally from Africa in Europe, Asia and America around 15 000 years BC. AB was formed between 500 and 900 BC also by the mixing of races. There are no scientific objections to following this diet, but there is no known study that demonstrates a relationship between blood groups and appropriate dietary patterns.**

Diamond Diet

The concept of the Diamond diet is based on three cycles: main meals (12 - 20 hours), digestion (20 - 4 hours) and elimination (4 - 12 hours). During the elimination cycle, one should drink only juice or eat only fruits and vegetables, and during the cycle of main meals, a normal varied diet. There is no objection to the composition of this diet, but the distribution of the diet is contrary to the current recommendation to consume the greater part of the food during the first half of the day. It encourages the incorrect eating habits of many obese people: not eating breakfast in the morning, not eating lunch at midday, and then eating what they can when they return from work or in the evening.

Intermittent fasting

Intermittent fasting (IF) collectively refers to all diets in which a **period of normal intake** of food is cyclically interspersed with periods of **voluntary fasting** of varying length. IF has been shown to be quite **effective in weight reduction** as well as in the prevention and treatment of many health complications. The disadvantage is that it does not primarily modify the quality or quantity of food consumed, but only the timing of food intake.

Slimming cocktails

Low-calorie liquid protein diets (shakes) can provide the body with all the nutrients it needs at low energy levels. If they are to be the only source of nutrition, they should be given under the supervision of a doctor. They are justified if a person needs to lose weight quickly or if he or she is unable to lose weight even with a daily intake of around 4000 kJ and physical activity. But they do not teach the obese person the necessary lifestyle change.

Single diets

Diets based on the consumption of one food or one type of food, e.g. egg diet, grapefruit diet, Beverly Hills diet (fruit only), fat eater soup (cooked with cabbage, onions, peppers, tomatoes and celery) and many other "miracle" diets for weight loss are significantly inadequate nutrition. Due to the limited choice of foods, although the person will **reduce energy intake and lose weight** (which may be due to fluid loss in the first phase), he or she will not **learn to eat properly** and will become fat again after switching to a normal diet.

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Vegetarian dishes and their importance in the restaurant industry (<https://www.gastrofresh.cz/jaka-vegetarianske-ji-dla-by-nemela-chybet-v-zadne-restauraci/>)

References

Literature used

KUDLOVÁ, Eva. *Hygiena výživy a nutriční epidemiologie*. 1. vydání edition. Praha : Univerzita Karlova, 2009. 287 pp. ISBN 978-80-246-1735-0 .

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