



Features of Nutrition and Selection of Biologically Active Supplements in Covid-19

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Abstract The article reveals the hygienic requirements for the nutrition of the population during the COVID-19 pandemic, provides reasons that need to be taken into account when drawing up a diet, notes recommendations on the daily calorie intake, dietary habits during self-isolation, provides recommendations on food products, their preparation methods and inclusion in food of vitamins, dietary supplements (DS).

Keywords Nutrition for COVID-19, food hygiene, calorie, food ration, fortification of food, (DS)

Introduction

During the COVID-19 pandemic, everyone suffers a stressful condition in the form of worrying about their health, the health of loved ones and those around them [1, 23]. Such an atmosphere directly affects the general condition of the body, not to mention the functional abilities of organs and tissues [18]. Stress, being the body's response to a threatening danger, simultaneously affects the vital signs of the body and disrupts them. Constant stress is dangerous not only by the development of neurosis and neurosis-like states, but also by an indirect effect on the immune processes of the body and a decrease in the function of this system, a violation of the adaptive potential of the body [2, 3, 15]. During a pandemic, the media often publish recommendations about proper nutrition, dietary supplements (DS), food additives and a number of "medicinal plants", as well as food. Garlic, ginger, berries and fruits contain vitamins, trace elements, antioxidants, flavanoids in large quantities, however, the therapeutic or prophylactic effect, and especially on the coronavirus infection COVID-19, has not yet been proven, nevertheless it is widely recommended and used by the population. Articles have also appeared recommending eating high-calorie foods that include animal fats. But due to the fact that such food contains a large amount of saturated fatty acids, it is not recommended for frequent consumption [4]. Thus, taking into account the above, it should be noted that the relevance of nutrition of the population during a pandemic is a particularly important topic.

Stress plays an important role in the current epidemiological situation, when self-isolation, home quarantine can cause an increase in the population's demand for food. But in such a situation, the food intake should be optimal and fully satisfy the daily needs of the body, especially a young, growing body for macro and micronutrients.

Of course, the maximum reduction in the influence of factors causing stress plays an important role. Such optimal food should serve to increase immunoreactivity and increase the body's resistance [16].

During the period of self-isolation, in view of the fact that physical activity decreases, there is a decrease in daily energy consumption by 300-400 kcal or more in adults and by 200-300 kcal in children, which served as the basis for the recommendation by many scientists of the following division of food intake, where breakfast should be 25 %, second breakfast - 5%, lunch - 35%, and afternoon tea - 10%, while it is desirable that dinner be 25% of the daily



food intake. With such a diet, the quality of food is of particular importance, where the ratio of proteins, fats, carbohydrates, vitamins and minerals must be optimal, and the sources are varied [5, 20].

It is recommended to include bread, cereals and pasta from a mixture of rye and wheat, whole grains and cereals from traditional products in the diet. The diet should include fruit bars, muesli, cereals, fortified with fiber.

It is also useful to include milk and dairy products, in the form of kefir, yogurt without fruit additives, the fat content of which does not exceed 2.5%; cottage cheese with a fat content of no more than 5%; cheese with a fat content not exceeding 30% and sour cream with a fat content not exceeding 15% [19].

From meat products we recommend poultry, fish and beef. It is advisable to use sunflower, olive, corn and soybean oil. Eggs and dishes, salads with eggs should be included in the menu at least 2-3 times a week. The diet must necessarily include fresh vegetables and fruits at least 400 g per day [6].

During quarantine and self-isolation, the traditional diet will be rational if it consists of 3 healthy meals a day and 1-2 snacks: for breakfast - dishes from oatmeal, eggs and cottage cheese (cereals, pancakes and casseroles). Optimal additions can be fresh vegetables and fruits, as well as dishes made from them, cheeses. Drinks include coffee, tea and cocoa - especially for children. The second breakfast can consist of juice, fresh and dried fruits, nuts, milk and dairy products, rye bread, baked goods and biscuits. Lunch should include fresh vegetables and salads from them, first and second courses, drinks. Adding sunflower, olive and corn oils to salads is considered useful. If the first courses are vegetable soups, broths, borsch, fish soup, then the second courses can be dishes from beef, poultry and fish. Garnishes should be prepared with 5 types of vegetables, oatmeal and pasta. In the form of drinks, you can include compotes, jelly, fruit drink, as well as decoctions of fresh and dried fruits with little or no sugar added. At night, it is advisable to use kefir, fermented baked milk, yogurt, bioyogurt, biolact, the fat content of which does not exceed 2.5% and enriched with probiotic microorganisms [21].

The recommendation for optimal and adequate food should be appropriate for body weight, age and level of physical activity. Of course, the right way in such a situation is to reduce the energy value of daily food by 200-400 kcal and increase the physical activity of the population, in the form of recommendations for daily cleaning of the house, playing sports and physical exercises [24].

So, children aged 3 to 7 years are recommended 1500 kcal, and children from 7 to 18 years old 1600-2000 kcal, healthy women over 18 years old 1600-1800 kcal and men of these ages 1800-2100 kcal per day [4]. In addition, the daily fluid intake should be at least 1 liter in preschool children and at least 2 liters in adults [13, 25].

Also, one of the main roles is assigned to micro and macro elements, vitamins, because the constant presence of a person at home, a lot of free time creates conditions for hyperphagia, which is also the body's response to stress.

During the COVID-19 coronavirus pandemic, self-isolation and home quarantine become the cause of constant stress. To increase the adaptive potential of the body, it is necessary to optimize the diet by adding biologically active substances from medicinal plants that have a sedative effect, accelerate the body's resistance processes and increase the body's immune status [7, 14]. For this purpose, it is recommended to use biologically active additives (DS) in the form of infusions, tinctures, decoctions, tea, powders, as well as in the form of extracts obtained from medicinal plants valerian, motherwort, lemon balm, chamomile, sage, ginseng, cranberry, St. John's wort, milk thistle, echinacea, lemon, turmeric, mulberry and others [8, 22]. For example, valerian with chamomile in filter bags for infusion, apple-cranberry liquid infusion in 100 ml bottles, eleutherococcus with herbs in the form of a liquid infusion of 100 and 250 ml each, soothing herbal tea, mint calli in the form of tea bags, "Red Rose" in the form of tea bags, organic rosehip and hibiscus tea, herbal tea from hawthorn fruits and much more [12]. Such dietary supplements, being natural, affect the body physiologically. They act as substrates of the body's metabolism, serve to support the processes of homeostasis under constant exposure to stress factors, including as cofactors of enzymes and as a ligand, affect the recipe structures of organs and tissues, being selective growth factors of physiological bacteria of the gastrointestinal tract, contribute to the normalization of metabolic processes in the body [11].

Also, it is recommended to enrich the diet by adding vitamin and mineral complexes. Vitamins, being organic compounds, are necessary for the normal functioning of organs and tissues of the body. They are not synthesized by the body itself and therefore the intake of vitamins from food is necessary. But during a pandemic, when the body is under constant stress, the body's need for these organic compounds increases, which must be taken into account



when compiling a smaller one and recommending a diet. In particular, food should be enriched with vitamins D, A, E, K, C, group B, microelements zinc, selenium, magnesium and others in the amount of daily requirement with such dietary supplements as "Adecta", Vita-magnesium or Vita-selenium, vitamin mineral complexes such as ImmunoLux, Antioxidant Forte, Immunity Forte and others that replenish the increased need of the body [10, 17].

Dietary supplements containing proteins and amino acids saturate the body with essential nutrients for nutrition, growth and health promotion. These include such widely used Nutrikap capsules, a mixture of dry proteins "Madonna" with vitamins, macro and microelements, Biofast, Bonolact Lacto + Mineral, Eubikor and others, which contain such essential amino acids as isoleucine, valine, leucine, lysine, threonine, methionine, phenylalanine and tryptophan. Such dietary supplements are available in the form of capsules, powders, tablets and lozenges, and in liquid form in bottles with a dispenser [9].

Thus, a balanced diet during the COVID-19 coronavirus pandemic should serve not only as food to satisfy nutritional needs, but also as a medicine that supports the body during a period of constant stress and contributes not only to maintaining health, but also to the growth and development of the body.

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