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**ИНТЕРВАЛЬНОЕ ГОЛОДАНИЕ КАК ПИЩЕВОЙ ГОРМЕЗИС.  
ЗНАЧЕНИЕ В ПОДДЕРЖАНИИ И УКРЕПЛЕНИИ ЗДОРОВЬЯ**

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**INTERMITTENT FASTING AS A FOOD HORMESIS.  
IMPORTANCE IN MAINTAINING AND STRENGTHENING HEALTH**

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**Резюме.** В статье рассматривается вопрос влияния интервального принципа питания на психическое, физическое и социальное здоровье человека, а также значение периодического голодания в поддержании и укреплении здоровья. Результаты опроса показали, что большинство студентов относятся положительно к интервальному голоданию, но оно еще не заслужило необходимого уровня доверия со стороны населения.

**Ключевые слова:** интервальное голодание, образ жизни, эустресс.

**Resume.** The article discusses the influence of the intermittent principle of nutrition on mental, physical and social health of a person, as well as the importance of periodic fasting in maintaining and strengthening health. The survey results have shown that the majority of students have a positive attitude to intermittent fasting, but it they don't consider it to be a reliable way to improve health.

**Keywords:** intermittent fasting, lifestyle, eustress.

**Relevance.** In the modern world, great attention is paid to the issue of nutrition, because it influences our well-being, energy level, productivity and the quality of life. There are a large number of different types of nutrition, such as fractional, separate nutrition, vegetarianism, eating raw food, high-frequency nutrition, Ayurvedic nutrition. Nowadays one of the most popular principles of nutrition is intermittent (periodic, interval) fasting, which consists of eating at certain intervals.

**Aim:** to identify the effects of periodic fasting on the physiological processes of the human body and to find out the attitude of people representing different cultures to this nutrition regime.

**Objectives:**

1. To collect and analyze information from literature sources about the effect of intermittent fasting on the human body.
2. To conduct a survey among Belarusian and international students of BSMU to clarify their attitude to intermittent fasting.
3. To evaluate the pros and cons of following this style of nutrition.

**Materials and methods.** The methods of comparative analysis and a sociological survey conducted among 154 Belarusian students and 41 international students in the spring of 2023 were used in the work. The data obtained were statistically processed and structured with the help of the Microsoft Office Excel 2007 computer program.

**Results and their discussion.** To identify the effect of periodic fasting on the physiological processes of the human body and to reveal the attitude of people representing different cultures to this nutrition regime we have questioned 195 respondents, including 154 Belarusian and 41 international students.

The participants were divided into age and sex groups:

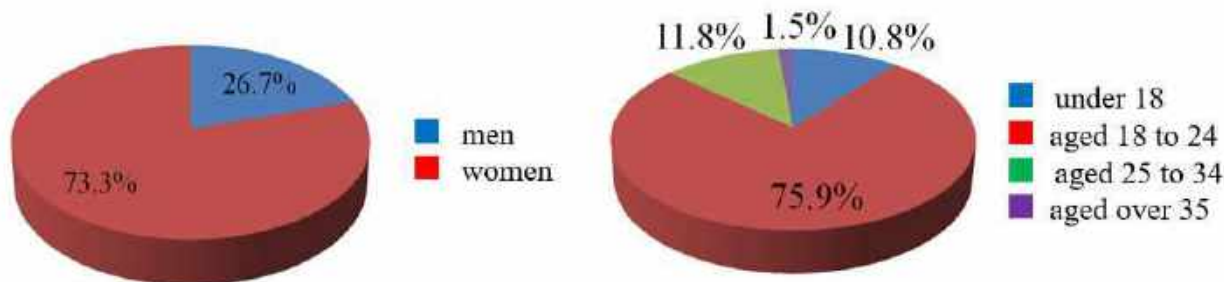


Fig. 1 – Respondents' sex and age ratio

The results showed that among Belarusian students 5.9% had never heard about intermittent fasting, 62.5% had heard about it, but were not interested in this issue, 33.2% were sufficiently aware of the effects of this principle of nutrition.

There were no international students who had never heard about these nutrition regime. And among them only 6 % were not interested in this matter.

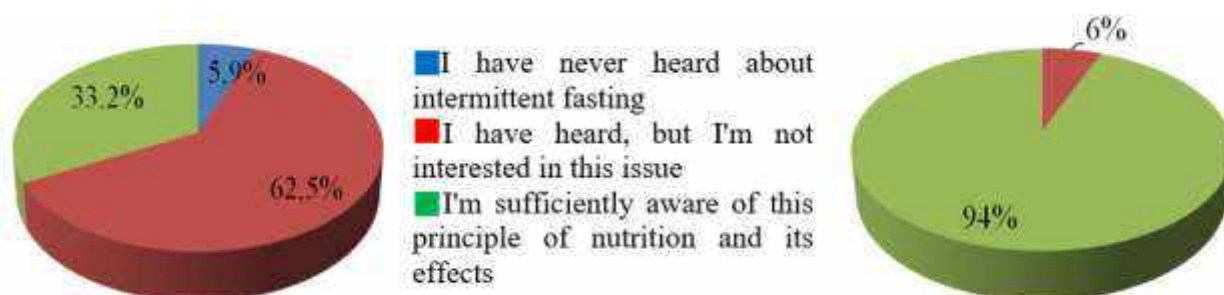


Fig. 2 – Awareness of Belarusian (left) and international (right) respondents about intermittent fasting

According to the study, both Belarusian and international students noted some weight loss, improved sleep quality, mental activity and concentration, general well-being and only 2% of the respondents did not notice considerable effects.

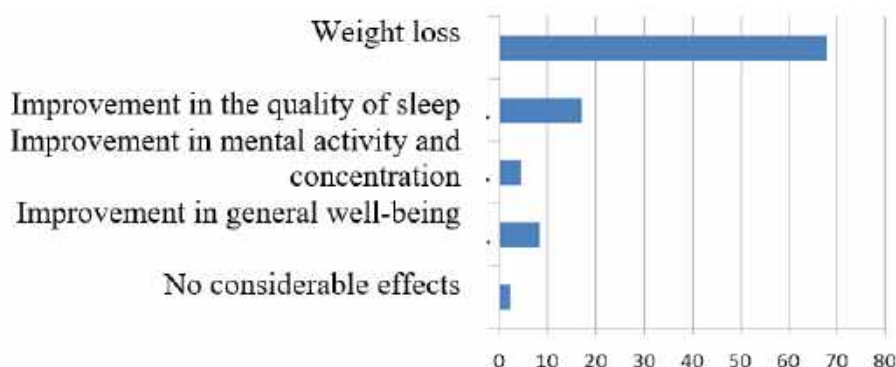


Fig. 3 – Respondents' positive changes in health conditione after practicing intermittent fasting

Our body has evolved to survive without food for many hours or even several days. The fact is that in ancient times, people ate little and not often and led an active lifestyle in search of food; hunting and collecting nuts and berries took a lot of time and effort.

The modern world, on the contrary, assumes an excess of calories due to the large-scale development of the food industry and a sedentary lifestyle. Extra calories and less activity can mean a higher risk of obesity, type 2 diabetes, heart and vascular diseases, neurodegenerative disorders and other illnesses. [1].

Research shows that intermittent fasting is a way to manage your weight and prevent or even reverse some forms of disease.

The process of fasting is a certain kind of stress to the body, but moderate and short-term stress is useful. This is the so-called eustress, as a result of which protective reactions are stimulated that keep the body in good shape [2]. The positive effect of low doses of stress is called hormesis. Hormesis slows down the progress of various diseases, including age-related neurodegenerative disorders, genetically determined neurological diseases, as well as stroke, seizure, etc.

The basic options of periodic fasting are:

- Alternate-day fasting or ADF – This type of intermittent fasting includes absolute and adjusted methods. In case of absolute fasting during the days of fasting, a person does not eat anything at all. In case of adjusted fasting, the person consumes up to 25% of the daily calorie allowance. [3].

- Periodic fasting or PF – The most famous way here is the 5:2 diet, when a person eats for 5 days and consumes up to 25% of the daily calorie allowance for 2 days a week.

- Time-restricted feeding or TRF – Here the periods of fasting are distributed throughout the day. The most famous and common example is fasting 16:8, when a person eats food for 8 hours during the day, and does not eat the remaining 16 (usually in the evening, night and morning).

Intermittent fasting produces a positive effect on:

1. Thinking and memory – This diet leads to the generation of new neurons in the hippocampus and improves long-term memory.

2. Cardiovascular system – Periodic fasting lowers cholesterol level, stabilizes blood pressure, heart rate and rhythm at rest and during exercise.

3. Physical activity – During periods of fasting, glycogen stores are empty. This means the body starts to burn fat for energy during exercise, which may help lose weight.

4. Metabolism – By stopping eating in the evening and fasting at night during sleep, we do not interfere with the normal work of circadian cycles and do not disrupt the correct secretion of hormones, metabolism substances, modes of energy consumption and recovery [4].

5. Tissue health – Periodic fasting accelerates the regeneration of cell membranes, which has a positive effect on the restoration of organs and tissues they consist of.

6. Longevity – Separate studies show that in some people practicing intermittent fasting, an increased expression of genes that are responsible for longevity has been observed.

7. Microbiome health – In 2018 scientists Larrick J., Karakan T., Mousavi S. and others suggested that intermittent fasting could alter the composition of the human intestinal

microbiome by increasing taxonomic diversity and promoting microbial remodeling. They proved that fasting produced a positive effect on a particular family of anaerobic bacteria called Lachnospiraceae. This group of bacteria, part of the order Clostridiales, is responsible for a process called butyrogenesis in the gut, which has beneficial metabolic and anti-aging effects.

But one must not forget that intermittent fasting is contraindicated to:

- pregnant women
- children (a growing body should not starve at all)
- confirmed diabetes mellitus
- people with gastritis
- people with impairment of the thyroid gland
- These categories of people need a constant intake of food in small portions.

### **Conclusions:**

1. There are cultures in which interval fasting is a habitual way of life.
2. Though the majority of Belarusian students are informed about intermittent fasting, they don't consider it to be a reliable way to improve health.
3. Intermittent fasting proves to contribute to weight loss, healthier heart and blood vessels, clarity of thinking, healthy and diverse intestinal microbiome.
4. Intermittent fasting is contraindicated to certain groups of population, therefore before starting a fasting regime, a patient should consult with a doctor, consider the existing health problems, age, the level of daily stress, nutrition, exercise, sleep and other aspects of lifestyle.

### **Literature**

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