

STUDY OF MORSE RATE OF RESIDENTS OF THE CITY OF BUKHARA DEPENDING ON THE ACTIVITY OF THE EARTH'S MAGNETIC FIELD.

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Abstract: *The article studied the influence of magnetic storms and disturbed geomagnetic conditions on the health of the inhabitants of the city of Bukhara for three months and developed recommendations in order to reduce the harmful effects of these days on humans.*

Key words: *geomagnetic field, biological organisms, disease, cardiovascular system, magnetic storm.*

Scientists of the Joint Institute of Physics of the Earth. O.Yu. Schmidt of the Russian Academy of Sciences studied the influence of physical fields of various nature (mainly electromagnetic) on the behavioral reactions of living organisms, including people. Weak (background) atmospheric electric and geomagnetic fields, constantly acting on terrestrial beings, are changeable: they experience annual, daily and more rapid fluctuations. But their presence and variations are so familiar that, as a rule, they are not noticed, although the oscillation parameters of natural electric and magnetic fields are ambiguous and have a wide range of values. For example, the amplitude (in this case, the deviation from the average value) of the electromagnetic field strength is especially large at a frequency from 1 Hz to 20 kHz, and resonances (its sharp changes) are observed at frequencies of 8-10, 16-17, 20-24 Hz.

It is noteworthy that these frequencies are close to the frequencies of the main rhythms of the human brain, as well as infrasound, which, according to many scientists, affects the human subconscious (this, in particular, explains cases of unaccountable horror that sometimes engulfs sailors, since one of the natural sources of infrasound serves as a wave of the sea). Numerous studies have established that this coincidence of frequencies plays an important role: changes with such a frequency of electric and magnetic fields have an adverse effect on humans.

In recent years, scientists have figured out what deviations of physical fields from a stable state must be in order for them to be felt in the same way as, for example, magnetic storms by some people. At the same time, an amazing fact was discovered: the physical characteristics of natural "harmful" fields differ from "normal" ones almost imperceptibly. However, the manifestation of very small changes in several even weak fields at once (electric, magnetic, mechanical - say, atmospheric pressure - etc.) can have a noticeable effect if their actions are consistent with the rhythms of physiological processes.

Special experiments on modeling natural physical fields revealed another amazing fact: electromagnetic and mechanical (for example, vibrations) fields in a wide range of frequencies (from ultra-low to ultra-high) act identically on living organisms. It has been established that the effect of

electromagnetic fields on behavioral reactions is probabilistic in nature and manifests itself in different organisms in different ways.

Various ways of protecting people from the effects of physical fields were also considered. Meanwhile, the subsequent study of their phenomena on life processes convinced scientists that it is possible, but ... not necessary, to shield dwellings and workplaces from these fields. Studies have shown that screening of weak variable natural fields, determined for each person, disrupts the functioning of the organism. It turned out that in order to maintain normal functional and mental processes, the constant action of weak natural fields and their hard-to-fix changes is necessary (besides, it is impossible to isolate oneself from all fields with one screen).

In this regard, the following hypothesis was put forward: the neural structures of the brain are involved in the management of human life, they function due to the exchange of energy and matter with his body and the external environment. They continuously perceive the complex "melody" of geophysical fields. Its variations contribute to the normal course of physiological processes, and in "abnormal" fields, adaptation mechanisms are activated, depending on the physiological and psychological state of the organism. Neural structures of various ranks control the subconscious and conscious activities of a person, respectively. In the lower structures, perhaps, information about the parameters of the external environment is concentrated. If so, then by acting on the body with weak external fields, it will be possible to influence the functioning of its nervous system.

The Earth's magnetic field is a factor in the impact of the environment on humans and living beings. The effects of geomagnetism on human health can be favorable or unfavorable, depending on the strength of the impact. We studied the impact of magnetic storms and disturbed geomagnetic conditions on the health of the inhabitants of the city of Bukhara for three months and developed recommendations in order to reduce the harmful effects of these days on humans.

The studies accumulated by scientists on the impact of magnetic storms on human health show that these storms affect all organs and systems of the human body. First, patients who suffer from severe disorders of the nervous system and its central apparatus, the brain, die from the effects of a magnetic storm. Then people die from diseases of the cardiovascular system, then there are deaths from serious diseases of internal organs. Comparison of medical data with solar phenomena showed that on the day of the growth of solar activity, the number of myocardial infarctions increases. The number of cases of this disease increases not only during a geomagnetic storm, but also a day before it, as well as within a day after it ends. In hypertensive patients on "magnetic" days and on the eve of them, weakness, lethargy, drowsiness, headaches, dizziness, periodic flickering of "flies" before the eyes are noted. In healthy people, mood also decreases on such days and headaches may appear, there is a feeling of anxiety and fatigue. It is estimated that each storm caused by a solar flare claims between 1,000 and 2,000 lives globally.

Geomagnetic activity index in November 2021

Date of	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Magnetic index activity	3	5	3	4	3	3	3	2	2	2	3	2	2	3	4	3	3	3	4	3	3	2	2	2	2	2	4	4	4	

Number of medical care visits in November 2021

Date of	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Number of patients with symptoms of increased blood pressure, headaches	25	38	21	34	27	24	20	27	24	26	24	25	25	31	33	22	22	23	35	22	22	23	27	27	24	27	32	33	30
The number of patients with pain in the region of the heart	80	19	91	60	96	96	77	88	88	99	77	88	102	110	110	77	88	100	77	88	99	88	88	89	99	99	99	116	

Geomagnetic activity index in December 2021

Date of	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Magnetic index activity	2	3	3	3	2	2	2	2	2	2	2	3	3	3	2	2	3	3	2	2	3	3	2	2	2	2	5	5	4	3	3

Number of medical care visits in December 2021

Date of	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
Number of patients with symptoms of increased blood pressure, headaches	25	22	24	31	30	34	19	30	23	23	21	27	23	25	28	28	24	23	24	33	29	29	23	25	33	32	32	39	40		
The number of patients with pain in the region of the heart	10	10	10	80	10	10	80	10	10	10	89	10	10	90	10	10	10	10	10	10	10	10	99	10	10	10	10	10	10	10	10

Geomagnetic activity index in January 2022

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Date of	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Magnetic index activity	2	2	3	1	4	3	3	2	2	2	2	2	1	2	2	4	4	3	3	3	2	2	2	3	3	2	2	2	2	2	2

Number of medical care visits in January 2022

Date of	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Number of patients with symptoms of increased blood pressure, headaches	29	25	30	28	27	32	18	22	32	29	28	28	36	30	27	32	20	25	40	32	33	22	24	22	14	30	33	30	33	27
The number of patients with pain in the region of the heart	10	10	12	10	18	10	12	10	12	10	10	8	12	13	15	18	20	18	12	10	11	26	22	15	15	10	10	10	10	

We investigated the impact of magnetic storms on the health of residents of the city of Bukhara, using weather forecasts and statistical data from the city ambulance about residents visiting a doctor with various types (35 types) of ailments and diseases. As a result, it was found that during the 3-month study (in November, December, January) 14880 people applied for emergency medical care, of which 3571 (24%) complained of pain in the heart, high blood pressure, headaches. When comparing many facts, the following was found out: on days of geomagnetic activity, the number of visits to the doctor about heart failure, blood pressure, and hypertension increases. So, on November 3 and 5, during the period of a disturbed geomagnetic situation, 92 people out of 325 who were at the reception turned to the first aid with symptoms of high blood pressure, with complaints of headaches and pain in the heart area.

November disease statistics showed that the maximum number of visits to the doctor with disorders in the work of the cardiovascular system falls on the days when magnetic storms were observed on November 3, 6, 16, 20, 28 and 29 (from 25 to 40% of cases). The same picture was observed in January: out of 36 who applied to the doctor, 21 had diseases of the cardiovascular system and blood pressure, and the age of the sick was not only retirement, but also average, in January out of 5719 (100% of those who applied to the doctor) - 1279 (24%). Thus, we can conclude that the Earth's magnetic field has a significant impact on the health of residents.

In order for the body to respond painlessly to a magnetic storm, it must have the necessary energy reserve. And he could also prepare for it in advance. Therefore, the onset of magnetic storms

over the past decades is predicted, forecasts are made of unfavorable days for health. To reduce the harmful effects of these days on a person, the following is recommended:

- this is a limitation of strong physical and emotional activity;

- exclusion of bad habits and junk food from the diet, monitor health, stock up on necessary medicines if necessary.

Important:

More rest.

Drink, if necessary, soothing teas (chamomile, mint, etc.).

Drink more water and breathe fresh air.

LITERATURE

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