

FIRST EXPERIENCE OF PERSON'S OWN MICROVIBRATION BACKGROUND RESEARCH

Introduction

External resources required by the organism.

Owing to the functions of the internal organs, the organism accumulates resources in intercellular fluid, in blood and in special resource storage –

buffer systems. However, restoration of internal organism resources is possible only in the presence of the sufficient number of external resources.

It is certainly known that the organism requires water, food and air. Could there be any other sources of resources feeding the organism? There certainly could, and there are a number of examples in animate nature.

Through many years of evolution, plants and animals adapted themselves to use various sources of energy. Plants use light for photosynthesis and wind to increase sap flow etc. The importance of any source of organism resource is determined by the organism's sensitivity to its total absence. Man can live without food for a few weeks, without water for a few days and without air for a few minutes. Man can live without light for a long time, though it causes certain complications. What else the organism cannot live without?

In 1994 the Ministry of Health of the Russian Federation registered the first vibroacoustic device that uses microvibration to affect the human body. At that time there was no yet understanding that microvibration was an important and irreplaceable body resource. While looking for an explanation of vibroacoustic therapy's high efficiency we drew our attention to background muscle activity of the organism.

History of the issue. It became possible to measure microvibration background after invention of a wide-band highly sensitive electronic phonendoscope (patent 2231285). It was developed for blood pressure measurement device. To single out Korotkov's tones one had to deal with strangely big noise, which, however, was neither an interference nor a noise from the device. The noise did not belong to inanimate matters. Moreover, the signal increased a few times at static muscular tension. Even at total relaxation the signal was a few times higher than the signal from inanimate objects found in the same location. The spectral analysis of the signal showed that its main energy lies within a 1-30Hz band, whereas the amplitude is noticeably modulated by pulse wave, although synchronization with pulse was not observed. When the organism went to sleep the signal

was twice as low. Assumption was made that static muscle tonus is created not by permanent activity of a single fiber, but by alternate activity of muscle groups located in different points in space. It was a variable tonus that created microvibrations, which were transmitted to body surface. Since the observed signal was taken off not the muscles themselves, but the body surface, it was called the microvibration background.

The purpose and peculiarities of the research. The purpose of the research was to study individual differences of microvibration background depending on the state of the organism in various parts of the body and to evaluate energy characteristics of microvibration background. All investigations were carried out using the same device called myotremorograph, which had special electronic phonendoscope as its sensitive element. The signal from electronic phonendoscope was recorded on the computer and then the received data was processed.

Research results.

It has been found that individual differences of microvibration background in healthy people are insignificant and make around 30-40%. Besides, microvibration background is rather stable in time, which allows us to talk about a physiological norm. At the same time, microvibration background has an apparent relationship with the state of excitement of the nervous system and presence of pathological changes in the organism.

Comparative evaluation of energy spent by the organism on microvibration background was compared to physical activity. At rest microvibration background is 10 times smaller than at maximum physical activity. It correlates well with changes in the intensity of blood circulation at rest and in active condition.

If maximum muscle activity can last for 1-2 hours, the background muscle activity never stops. For 24 hours muscle fibers constantly vibrate, thus the amount of energy spent during the day equals maximum physical activity. In other words, energy consumption required to support microvibration background is very big.

When influenced by the cold, the microvibration background increases up to

three times. In the pathology area microvibration background also increases up to 3 times compared to healthy people.

Such changes have been found in asthma, tuberculosis, adenoma and spine pathologies. In all instances, microvibration background in the pathology area was 1.5-3 times higher than normal. Moreover, when short of resources the organism reduces microvibration background in secondary zones, in an arm area in particular. It can be clearly observed in chronic impaired cardiac function.

During the study of vibroacoustic therapy it was found that the application of microvibration to kidney area creates a great effect on treatment result. In this connection, research was carried out on the effect of vibroacoustic application (tinting) by Vitafon device on personal microvibration background. Kidney area was exposed to microvibration, whereas changes in microvibration background were measured in the arm area. It appeared that after a 20 min tinting of kidney area the microvibration background increased 1.5 times, and after 40 minutes of tinting – up to 3 times, and then 1-6 hours later was back to normal.

Interpretation.

The fact that the organism spends a significant amount of energy to create microvibration background and that the latter increases in the pathology area indicate that microvibration is fundamentally important for physiological processes.

The point is that any biochemical or immune reaction requires that proteins, fat, cells and other biocomponents meet each other and orient themselves in space. In other words, the reacting components must get into contact. In a test-tube filled up with liquid the Brownian motion assists this process. The higher the temperature, the higher the average speed of molecules and the higher their contact rate and, hence, the response rate is higher. Biological tissue is not a liquid, and most reactions happen at cell level. In this respect the role of the source of the Brownian motion is played by microvibration. When, at absolute zero temperature the Brownian motion stops, all chemical reactions stops; the same way as when there is no microvibration all physiological and biochemical processes stop. Therefore, saturation of microvibration in tissues influences the intensity of tissue processes, including functional abilities of tissue and immune reactions.

Plants receive microvibration energy from wind, rain or animals' activity. Animals and humans have to create microvibration in their bodies themselves, and they cannot exist without it, not for a minute. The source of microvibration is the activity of numerous muscle fibers that lasts even in relaxed condition and in sleep. At physical activity microvibration background increases significantly. Man receives the required amount of microvibration energy only from certain physical activities.

Cats, when totally relaxed, start to purr, thus compensating the decrease in microvibration background. When sleeping, the organism has to halve its background muscle activity to restore its muscle resources. This reduces the lymph outflow from tissues, which causes morning edema, movement stiffness and sometimes pain.

The organism always suffers deficit of its own microvibrations and therefore is trying to use every opportunity to stimulate it "simultaneously". For example, good carriage achieved by back and stomach muscle tension required for better spine amortization enhances simultaneously satiety of the internal organs with the microvibration. Voice, used for communication, increases and supplies microvibrations to lungs, head etc. That's why people living alone for a long time begin to speak to themselves. Organism does not spend resources for no particular reason. When it cries from pain or groans, it is done for the purpose of creating microvibration.

Organism likes absorbing microvibration from the outside: shower, swimming, massage, towel massage of the body. Even hair and teeth brushing saturate considerably the head area and teeth with microvibration. For babies, daily bathing and pram strolls are, first of all, sources of microvibration.

Since microvibration is the analogy of the Brownian motion for biological tissues, microvibration amplitude must be commensurable not with molecule size, but with cell size: from units to tens of microns. Microvibration frequency is the analogue of the Brownian motion. The higher it is, the more energy it carries. However, the frequency range is capped. The point is that with the increasing frequency, at the required oscillation amplitude of a few microns, the force of cell membrane stimulation increases proportionally and may damage it. For this very reason the ultrasound is not used. However, the acoustic range is more than sufficient.

Conclusion

By studying microvibration background of a person, it becomes possible to quickly evaluate the organism's resource reserve, presence and location of main pathologies depending on their problematic importance for an organism, and to unambiguously verify the organism's death.