chromosomes, which could influence the predisposition to ascariasis. This study was the first genomic analysis to study the genetic predisposition to infection with roundworms, in particular *Ascaris lumbricoides*.

Subsequently, in the same population, a genomic analysis was performed with respect to another round worm - the whipworm, *Trichuris trichiura*. 1253 members of the giraffe tribe were counted helminth eggs. All examined were members of the same pedigree, which numbered more than 26,000 pairs of relatives. All of them were informative links for genetic analysis. The results of the study showed the presence of two loci of genes, which indicated a predisposition to the risk of infection with whipworm. One locus was located at 9, and the other – in 18 chromosomes. It was also suggested that two other loci: in 12 and 13 chromosomes - could influence predisposition to infestation. By the methods of molecular genetics, when studying another population – residents of Bashkortostan – it was established that a certain variant of the chemokine 11 gene (CCL11), namely CCL11 * A (-384A> G allele CCL11), and, accordingly The genotype CCL11 * A / * A is a marker of an increased risk of ascariasis. As is known, this chemokine is one of the cytokines - protein molecules, synthesized by immune cells and participating in the immune response. The HS-chemokine 11 gene (CCL11) is located in the human chromosome 17.

Individual predisposition to ascaridosis is described not only in humans, but also in pigs as a result of their infection with another species of *Ascaris suum*. Perhaps this allows us to consider the phenomenon of predisposition to parasitic diseases as general biological, characteristic of different species. Since ascaridosis in pigs can be a good model pathology for humans, the data of the decoding of the mitochondrial genome of human ascarids and pork ascarids also represent interest. Thus, a complete analysis of the mitochondrial genome *Ascaris lumbricoides* showed that the parasite contains 14,281 pairs of nucleotide bases. The relative content of nucleotides of four possible types was as follows: adenine – 22.1%, tymin – 49.8%, cytosine – 7.8% and guanine – 20.3%. In another study, a comparative analysis of the mitochondrial genome of human ascaris and pork ascarids was performed. The genetic identity of the mitochondrial genomes *Ascaris lumbricoides* and *Ascaris suum* was 98.1%. An assumption was made that *Ascaris lumbricoides* and *Ascaris suum* may represent the same species.

Conclusions. The research confirmed that predisposing to helminthes is at least partly genetic in origin.

DRINKING WATER AND ITS INFLUENCE ON COURSE OF HUMAN GENETIC DISORDERS
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Introduction. Water is a transparent, tasteless, odorless, and nearly colorless chemical substance that is the main constituent of earth streams, lakes and oceans, and the fluids of most living organisms. Water covers 71% of the Earth's surface. Only 2.5% of this water is freshwater.

Aim. The research was devoted to investigation of water biological functions and consumption by humans in relation to different multifactorial genetic disorders.

Material and methods. Descriptive method was used based on the analysis of 19 scientific articles, related to the topic.

Results and discussion. Safe drinking water is essential to humans even though it provides no calories or organic nutrients. Access to safe drinking water has improved over the last decades in almost every part of world, but many people still lack access to safe water. Water is an essential component required for the effective working of our body since body parts including our brain and the various tissues are mostly composed of water. It also removes toxins and most of the waste products from our body contributing to a healthy quality of life. If our body lacks water then our heart has to make an extra effort to pump fresh oxygenated blood to our organs causing severe health issues. Drinking plenty of water helps fight against the flu and other ailments like kidney stones. Water, along with lemon or lemon juice is often used to overcome respiratory diseases, intestinal problems, rheumatism and arthritis. On the whole, water plays a fundamental role in strengthening immune system. In addition, it helps maintain the elasticity and suppleness of the skin and prevents dryness by detoxifying the skin. Some medical links were found concerning to genetic conditions and water consumption. For example, it was discovered that consuming

pesticide-contaminated well water may provoke Parkinson's disease. Other studies demonstrated that drinking 1.5 L of excessive water can assist weight reduction in patients with common multifactorial disorders, like obesity.

Conclusions. The research has demonstrated that the water role is immense, and in many cases can delay or accelerate different human multifactorial conditions, depending on its quality and quantity.

WBAN (WIRELESS BODY ACCESS NETWORK): MANAGING ILLNESS FOR MANAGING WELLNESS BY FOCUSING ON PREVENTION AND EARLY DETECTION

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Introduction. Definition by IEEE 802.15.6 is a communication standard optimized for low power devices for their operation on, in or around the human body (but not limited to humans) to serve a variety of applications including medical, consumer electronics or personal entertainment and other. How they addressed the need? A wireless body area network (WBAN) is a collection of wireless sensor nodes that are situated either inside or outside the human body for monitoring the outside environment and functions of the body.

Aim. This study was related to realize WBAN strategy.

Materials and methods. Analysis of scientific sources was done concerning the problem.

Results and discussion. Wireless Body Area Network allows the integration of intelligent, miniaturized, low power sensor node in, on or around a human body to monitoring body function. WBAN is a network around the human body. It senses biological, physical, chemical changes of our body and alarms the person who wears it. It also helps in automedication in case of emergency; it sends the information throughout the world through internet.

Sensors-biodegradable device is constituted by: transceivers – devices transmit and receives data; processors – master the functioning of all components in the WBAN; battery – supplies power. WBAN Sensor consists of an intelligent node which is capable of sensing, sampling, processing, communicating. Below are some example of WBAN sensors: ECG (electrocardiogram) sensor for monitoring heart activity; EMB (electromyography) sensor for monitoring muscle activity etc. WBAN is easily accessible by in or out body it saves a lot of time and has a bio-feedback: for example if high sugar level, a device triggers an insulin pump to also inject a dose of insulin (artificial pancreas). The solutions should be efficient in such a way that the low-energy sensor devices can be able for functioning the entire implementation. As well as data security and data confidentiality must be maintained and unauthorized accesses should be prohibited.

Conclusion. WBAN has benefits to patients, medical personnel and society by continuous monitoring and early detection of possible problems, also improving the quality of life and collected multidifferent parameters from body.

LEAKY GUT SYNDROME AND ITS GENETIC PREDISPOSITION

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Introduction. The body has more bacterial cells in the gut than is found in the entire human body. most of the chronic diseases our society faces today is linked to deregulated gut flora or dysfunctional gastrointestinal system such as Celiac disease, Crohn's disease and irritable bowel syndrome, autoimmune diseases of type 2 diabetes, multiple sclerosis,

Aim. This study is targeted at investigating the predisposing factors and impacts of leaky gut on human and ways of maintaining a healthy gut.

Materials and methods. Descriptive method was used based on the analysis of over 17 recent scientific journals, articles and reviews.