Diabetes is a world problem that increases over the years.

Statistics reveal that 371 million people suffer from this disease in the world, which is 7% of the total population of the Earth. The number of new cases of disease is calculated as tens of thousands.
The main problem of diagnosis of diabetes is its identifying at an early stage, before the development of serious complications. Traditionally, blood tests were used to detect hyperglycemia, but the new non-invasive Health Monitor method brings the fight against diabetes to a qualitative new level. The device allows solving at once two major problems: rapid screening diagnosis of diabetes and monitoring the quality of compensation for hyperglycemia. Ultimately, it allows minimizing the negative impact of diabetes on human health.

The problem of diabetes worldwide

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In the disease distribution, type 2 diabetes mellitus (insulin-independent) is leading, it is found in 92% of all patients, patients with type 1 diabetes (insulin-dependent) account for 6%. The remaining 2% is distributed among the other forms of this disease.

The indicators of annual mortality are also impressive:

- Type 1 diabetes mellitus leads to death of 2 people per 100,000 population.
- Diabetes of type 2 kills 60 people per 100 thousand.
- Other forms take about 1 life per 200 thousand inhabitants.

The average life expectancy for people with type 1 diabetes is only slightly higher than 50 years. The situation about type 2 is little better - more than 70 years. It is not difficult to guess that the life expectancy directly depends on how quickly high blood sugar level was detected.
How does monitoring help patients?

The main danger for health and life of a person with diabetes is not so much high blood glucose, as long as the hyperglycemic state.

The longer the hyperglycemia persists, the more proteins bind to glucose (glycated). It changes the structure and, accordingly, the function of complex molecules. This process causes the main complications of diabetes:

- Microcirculatory disorders
- Rapid progression of atherosclerotic events
- Depression of immune system
- Deterioration of reparative processes

The consequence of these events are tuberculosis, polynuropathy, blindness, gangrene and amputation.

It is possible to protect yourself from all these extremely negative effects only if you constantly maintain a normal blood glucose level. It does not matter how: through diet, pills or injections of insulin.

Clinical practice shows that it is much more difficult to conduct adequate monitoring of hyperglycemia than timely correct it.

Evolution of control methods

Early medicine recommended to doctors trying urine of the patient to determine high levels of sugar. Is there a lot of fiction in this lead-up - it is not known.

In the historically foreseeable period, blood tests are used for this: first from the vein, then from the finger. Implementation of individual glucometers whose principle is also based on the study of blood into practice was a huge achievement.

However, a real breakthrough in controlling hyperglycemia should be considered the technique used in Health Monitor device: the main principle of its work is spectrometric analysis of exhaled air.

The essence of the methodology

We inhale and exhale a mixture of gases. Each of them absorbs light of a certain wavelength (spectrum). The device allows conduction of comprehensive and full-scale spectral analysis of the exhaled air.

After that, the computer compares the received data with the standard stored in the memory of the device and it alarms if case of any anomalies.

In the diagnosis of diabetes, the main criterion is the level of acetone. This substance is constantly contained in blood and it is excreted from body through the lungs. Elevation of blood glucose inevitably leads to more or less severe acetonemia and it is reflected in the spectrum of exhaled air. The Health Monitor device allows recording of these changes.
The distinctive features of this gas analyzer are:

- Resistance to noises - there will be no water lines in the spectrum
- Sensitivity to acetone vapor is 15 times higher than analogues
- Minimal supplies for individual use
- High mobility
- Easy adaptation to modern data transmission technologies

These qualities allow the use of Health Monitor within the framework of large-scale medical programs for screening diagnosis of diabetes mellitus, in small ambulatories and even privately to monitor the effectiveness of hypoglycemic therapy among certain patients.

What are the advantages of the device for medical workers?

In the hands of health workers there is a unique tool that allows examining many people: one analysis takes a little more than a minute.

All collected data is transferred to a digital medium and stored in electronic format, so it is always available for analysis and processing.

The client software for all operating systems on the market helps to fully exchange information in the patient-doctor system.

What are the advantages of the device for patients?

Most importantly - in order to establish or exclude the diagnosis of diabetes, it will not take a drop of blood or much time: just exhale into the individual mouthpiece for a few seconds.

If a person suffering from diabetes have a Health Monitor at hand, there is always a possibility for him to check the quality and effectiveness of the measures taken to reduce blood sugar levels.

Obtained results are sent via a special application to the doctor who leads the patient and the doctor can give reasonable advice based on objective information.

Thus, Health Monitor allows to effectively solving both problems associated with hyperglycemia: timely identify and keep under control blood sugar level.

In other words - to provide several decades of full, integral life to a diabetic person and members of his family.