



МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ  
СУМСЬКИЙ ДЕРЖАВНИЙ УНІВЕРСИТЕТ  
КАФЕДРА ІНОЗЕМНИХ МОВ  
ЛІНГВІСТИЧНИЙ НАВЧАЛЬНО-МЕТОДИЧНИЙ ЦЕНТР

## **МАТЕРІАЛИ**

**XIV ВСЕУКРАЇНСЬКОЇ  
НАУКОВО-ПРАКТИЧНОЇ КОНФЕРЕНЦІЇ  
СТУДЕНТІВ, АСПІРАНТІВ ТА ВИКЛАДАЧІВ  
ЛІНГВІСТИЧНОГО НАВЧАЛЬНО-МЕТОДИЧНОГО ЦЕНТРУ  
КАФЕДРИ ІНОЗЕМНИХ МОВ**

**«TO MAKE THE WORLD SMARTER AND SAFER»**

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sensitive to them, causing an infectious disease, destroying them from the inside. However, the advantage of the bacteriophages' action is not to ruin the beneficial microflora of the body, unlike antibiotics.

Rebeca Dedrick of the University of Pittsburgh described a clinical case of a 15-year-old girl suffering from cystic fibrosis and infection with the antibiotic-resistant *Mycobacterium massiliense*. The antibiotic treatment had no effect, due to the antibiotic resistance, doctors decided to treat with bacteriophages. At the end of six's months therapy, the patient got over, the lung and liver functions improved.

Phages are not sensitive to antibiotics, high temperature, enzymes, disinfectants, but are very sensitive to acids, ultraviolet radiation, and ionizing radiation. They are available in a liquid form, in the form of tablets, coated with an acid-resistant coating.

The phage therapy is the usage of bacteriophages for the treatment of human bacterial infections. It is still one of the developing directions of medicine. Bacteriophages are used to treat gastroenterology, urology, gynecology, surgery, otolaryngology, pulmonology, infectious diseases of the gastrointestinal tract (GIT), inflammatory diseases of the skin and mucous membranes.

## SMART LENSES FOR DIABETICS

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What is life with diabetes? It is an annoying control of blood sugar and injections with insulin. Using a glucometer for diabetics is the same as you check your mail box. The problem is that it becomes boring very soon, particularly for diabetics who keep active. It is time to change. Scientists in one of the South Korean institutes developed a device that combines the glucometer with ordinary contact lenses.

How does it work? The soft lenses have flexible chips with glucose sensor and LED. They measure the level of glucose in your tears. The glucose sensor is based on the sugar (glucose) oxidase enzyme and responds to an excess of glucose concentration in your tears. Then the signal goes to the LED insert, which works at a given sugar level and turns on. High level of glucose makes the LED display glow with a certain frequency.

Scientists tested their device on a rabbit successfully. They compared the level of glucose in blood and the result of lenses. They were equal. In addition, the rabbit didn't have any allergic reactions or vision problems.

What advantages do the lenses have? First of all, lenses are made of transparent materials and do not require charging. It seems to be perfect! Secondly, they make life of diabetics easier. Now patients and doctors can say «No» to glucometers. Without any doubt you can do your daily activities, smile, run, lenses will control everything themselves.

This item isn't available in Ukraine. Today, efforts of scientists are put in to understand how accurate lenses with glucometer for people are. If testing with people is successful, the researchers will introduce the device to global markets.

In conclusion, the idea of Korean creators seems to be quite good, because diabetes is a disease for the whole life. The technology is aimed at easing of such people's lives. It is an important step in the direction to the establishment of health's support. After all the technology is unique, they measure the level of sugar continuously, that's why a rapid rise of blood glucose can be found immediately.

Sources of information:

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