

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

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

**“WITH FOREIGN LANGUAGES TO MUTUAL
UNDERSTANDING, BETTER TECHNOLOGIES AND
ECOLOGICALLY SAFER ENVIRONMENT”**

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INNOVATIONS IN MEDICINE

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The problem of improving healthcare services through implementing new technologies is vital these days. Innovations in medicine enrich medical practice; they also make a valuable contribution into successful treatment and even saving human lives. In this light, a few mainstreams within the general tendency of introducing medical inventions and improvements should be mentioned.

Using specially designed scanners for diagnosing different skin diseases without an invasive surgical biopsy is quite a promising technique nowadays. For example, new optical scanners collect information at several electromagnetic wavelengths, process data using algorithms and match against a registry of a number of digital images of melanoma and various skin diseases. This procedure lets the patients avoid surgery scars and reduces the costs spent.

People who suffer from diabetes face the problem of monitoring and correcting glucose levels daily. 'Bionic Pancreas' for type 1 diabetes can be a perfect solution in this case. The system includes a continuous glucose monitor and a "brain" (such as a smartphone) that calculates what the patient needs to maintain appropriate glucose levels, and then communicates with an infusion device that delivers insulin or glucagon. Devices of that sort can greatly simplify daily routine of the diabetics.

Another purpose of modern healthcare system is introducing new methods for pain relieving. Of course, 'electronic aspirin' has nothing to do with chemical tablets and pills. A technology is a patient-powered tool for blocking SPG signals at the first sign of a headache. The system involves the permanent implant of a small nerve stimulating device a handheld remote controller. According to tests electronic pain relieving has proved efficiency and simplicity.

New ways of treating data obtained by means of traditional devices is another trend in modern medical researches. Some new studies report that electroencephalography (EEG) may be helpful in determining psychosis risk, deciding on psychosis therapy, and

possibly even in treating schizophrenia through an EEG-based biofeedback-like process. A new approach to processing EEG results is very valuable for predicting symptom severity, which determines course of treatment.

Getting information about the patient's state constantly, regularly and efficiently is an urgent issue for modern doctors. An important step in this direction is using tiny ingestible sensors placed in pills. Sensors of this sort can record the way the medication is ingested, as well as the patient's heart rate, body temperature and position, and rest and activity patterns. The data are wirelessly transmitted to a smartphone app, which then sends it to a provider, caregiver, or family member.

Modern healthcare services are introducing new forms of doctor-patient interaction. After telemedicine having become a common practice, new medical robots go one step further – they can now patrol hospital hallways on more routine rounds, checking on patients in different rooms and managing their individual charts and vital signs without direct human intervention.

As far as the number of gadgets for measuring and monitoring data is growing constantly, the problem of processing and interpreting patient-generated data has emerged. A lot of wearable devices like smart watches and fitness trackers are able to track blood pressure, cardiac output and stroke volume as well as blood oxygen concentration. Some scientists believe that large volumes of information should be overseen, processed and displayed by specially created medical software. Very soon you won't need a doctor to get a complete physical.

Modern smartphones are powerful enough for providing their users with storing large amounts of information and calculating data. Many medical scientists are about to take advantage of utilizing mobile devices. Having connected smartphones to some optical peripherals, doctors get the opportunity for capturing, storing and evaluating images of different segments of the eye. It decreases the use of expensive equipment and makes relevant information portable and easy to reach. Summing up, new technologies are used to turn modern medicine into a powerful tool for diagnosing and treating.