



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

## **МАТЕРІАЛИ**

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ЛІНГВІСТИЧНОГО НАВЧАЛЬНО-МЕТОДИЧНОГО ЦЕНТРУ  
КАФЕДРИ ІНОЗЕМНИХ МОВ**

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

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## BIOTECHNOLOGY IN MODERN LIFE

Vladyslava Kust - Sumy State University, group MC.m -701  
N.M.Usenko – EL Adviser

Scientists say that all discoveries take place at the junction of various specialties. Biotechnology is the basis of scientific and technological progress and improvement of the quality of human life with the world around him.

It should be emphasized, that the biotechnology is designed to solve the key problems of our time, using the potential of living organisms. Currently, biotechnology is divided into several of the most significant segments.

The "white" biotechnology includes industrial biotechnology, focused on the production of products previously produced by the chemical industry. The components of plastics, as well as oxidizers of the food industry, are synthesized using fungi *Candida* on oil waste. Also this branch is important in case of the nutritional problem of diabetics, which can be solved by specific foods. They have improved taste (sweet and bitter components), thanks to the fungal mycelium, which is added during the preparation.

The "green" biotechnology is more often associated with the agricultural sector and the branch of selection. Actually some herbs are already grown with the resistance to high concentrations of heavy metals. In any case, it's important in terms of environmental pollution.

The "red (medical)" biotechnology demonstrates a method of growing bone grafts from patient adipocytes grown in bioreactors. Preparations based on nanoMIP (molecularly imprinted polymers) can be used as carriers of anticancer drugs (specificity for point fragments of the molecule). Scientists have edited a gene for a neurotransmitter receptor to reduce intrusive repetitive movements in autism. This development is progressive method of disease' treating.

The “blue” biotechnology is mainly focused on the use of aquatic biota. Algae fuel is now called third generation biofuel, even could be used for airliners. Growing oil-containing algae in bioreactors is in 150-300 times more productive than growing soybeans. Green and brown algae are also used as bio-additives and components of skin care products (Laminaria, Chlorella, Phillophera etc.)

The “gray” biotechnology develops technologies and products for environmental protection. Scientists decided to grow bacteria *Bacillus subtilis natto* by nature. In particular, if the bacteria are metabolically active, they can generate smells. The area of interest is in finding a way to weave the bacteria into a fiber that could be woven or knit into other garments. Then it would fit within already established manufacturing processes, speeding up how quickly living, growing garments and shoes could be ready for consumers. There’re many projects of innovative materials that could get you sweater.

Biological design is engaged in the production of ordinary things from natural materials and the reduction of waste from production thanks to microorganisms. It was developed the material from algae and fungi, from which, using 3D printing technology, you can make a durable and biodegradable fabric. Therefore, we can make some ecological clothes using these technologies.

Lichens are used for painting walls and cleaning the air. Chopped and chewed pieces of them are able to be grown on the certain places. Such ‘wall-art’ can reduce the level of CO<sub>2</sub> and other gases in polluted cities. Talk for nothing, such global disaster destroys our atmosphere. The electrostatic properties of the web allow us to use it to attract small particles in the air, actually to create modern respirators. This is important in terms of air pollution and the greenhouse effect on the planet.

Summarizing, people differently perceive innovations in biotechnology. There are negative and positive examples of perception. However, people are afraid of introducing new

technologies. It is necessary to discuss the ethical issues of each experiment. It's needed to press the point we should know more about innovations in such branch of science as the Biotechnology.

## THE IMPACT OF CHRONIC STRESS ON HUMAN HEALTH

V.V.Khoruzhii, gr. MZ.m.-706, Sumy State University  
M.M. Dunaeva, Senior Lecturer

Most people associate stress with negative feelings. This is the physical and psychological response of the body that helps us better cope with a critical situation. The body releases hormones that speed up the heart rate and bring the muscles into full combat readiness. But chronic stress can have severe consequences.

Stress can be caused by everyday worries, problems at work, or an accidental quarrel with relatives. More serious life circumstances, such as a doctor's disappointing diagnosis, war, or the death of a loved one, lead to chronic stress. Stress affects a person's emotions, mood, and behavior. No less important, and often more serious, is its effect on the human body.

Under the influence of chronic stress, the central nervous system becomes vulnerable, which can lead to changes in behavior, cause overeating, malnutrition, alcohol, drug abuse, or social withdrawal.

In response to stress, a person breathes faster, trying to distribute oxygen-rich blood throughout the body. If you have breathing problems, such as asthma or emphysema, stress can lead to difficulties.

The heart also works faster under stress. The vessels contract and send more oxygen to the muscles to provide strength for an urgent response. This increases blood pressure. And constant hypertension in turn increases the risk of stroke and heart attack.

The muscles are strained to protect themselves from possible injuries if necessary. As a rule, they return to a calm