

Budevskii Y.S., Stepanova A.A.

E-CIGARETTES: NOT A SAFER ALTERNATIVE, BUT A GATEWAY TO PERMANENT ADDICTION AND ADVERSE HEALTH EFFECTS

Tutor: PhD, associate professor Petrova M.N.

*Department of Foreign Languages
Belarusian State Medical University, Minsk*

In recent years the number of people, both adults and adolescents, applying Electronic Nicotine Delivery Systems (ENDS) has significantly increased. Overall, e-cigarette usage is becoming an epidemic, which can result in many negative health outcomes, especially among adolescents. Therefore, the problem of smoking either tobacco cigarettes or e-cigarettes remains relevant today.

Essentially, electronic cigarettes are the same as traditional cigarettes, even worse. Originally, they were supposed to help quit tobacco smoking. Unfortunately, it was the foundation of modern vapes.

Due to the highly addictive nature of nicotine, most smokers who attempt to quit independently relapse within two months or less. Obviously, e-cigarettes are intended for commercial purposes rather than fighting the habit. The design and the mechanism of ENDS indicate this: vibrant and saturated colors, pleasant flavor and simple use which attract the youth.

At the biochemical level development of dependence is rather simple: nicotine enters the circulation through the lungs, then it travels to the brain where it diffuses into the tissue and binds to nicotinic cholinergic receptors which release dopamine (pleasure hormone). Therefore, production of dopamine starts to depend chemically on nicotine. The point of this problem is that vapers and smokers get used to a certain dose which subsequently ceases to give pleasure. However, as we know there is no production of dopamine without this nicotinic dose. Thus, we get a vicious cycle: vaper is not satisfied and can't give up.

Consequences are reflected in the defects of absolutely all organ systems, in particular: cardiovascular, respiratory and nervous systems. However, it has cumulative effect and is revealed in a year, but this part convinces smokers that they can leave it at any moment, so they keep smoking.

Toxic substances detected in e-cigarettes include toxicants (chemicals, nanoparticles, and heavy metals) and toxins. Overall effects include increased reactive oxygen species, DNA damages, inflammation and altered cellular mechanisms, which are essential in disease development. This way leads to pathophysiology of lungs, heart and brain which turns into numerous diseases such as those caused by common cigarettes. However, there are many nuances generally due to e-liquid contained in ENDS cartridges. Diacetyl is frequently added to enhance the taste. Inhaling diacetyl causes inflammation and may lead to permanent scarring in bronchioles - popcorn lung (bronchiolitis obliterans) - which makes breathing difficult. Other compulsory components of e-liquids are fatty acids which cause lipoid pneumonia development upon inhaling. All diseases resulting from vaping are difficult to be assessed because this product has not been around long enough.

There are numerous methods and well-known reasons to quit vaping. But every human is individual so the universal method does not exist. Among the most important recommendations in the fight against vaping could be the following: setting limits of applying e-cigarettes, family support, optimistic mood, new hobbies, lollipop usage, mobile apps or keeping a diary for monitoring the progress. If it does not work it is worth consulting a specialist (psychologist).

In conclusion smoking causes severe outcomes and heavy dependence on cigarettes, therefore, it is much better not to start it. E-cigarettes are not safer than traditional tobacco. They cause severe nicotine addiction, damage the lungs (popcorn lung, lipid pneumonia), heart, and brain due to toxic chemicals and heavy metals. Because health problems appear slowly, users falsely believe they can quit anytime. Although various quitting methods exist, the best advice is never to start vaping at all.