

U.D.C. 61.13058

## ACTUAL PROBLEMS OF HEALTH PROTECTION OF UKRAINIAN YOUTH

**Posudin Yuriy Ivanovich**

Doctor of Biological Sciences, Professor,  
National University of Life and Environmental Sciences of Ukraine

J.W.Fulbright Scholarship, 1995-1996,  
University of Georgia, Athens, U.S.A.,

Series of Lectures: “*Environmental Pollution Control: A Spectroscopic Approach*”.

***Abstract.** The primary health problems of young Ukrainians are induced by poor quality fast food, alcoholism, and smoking. Because of these addictions, as well as inadequately conceived public policy and the influence of commercial advertising targeting youth, this generation suffers from number of dangerous diseases that in some cases lead to premature deaths.*

**Key words:** youth, health, food quality, alcoholism, smoking.

***Анотація.** Розглядаються основні проблеми зі здоров'ям української молоді, викликані неякісним швидким харчуванням, пивним алкоголізмом, курінням. Внаслідок цих згубних звичок, а також непродуманої державної політики та впливу реклами, молоде покоління страждає від низки небезпечних захворювань, що ведуть у ряді випадків до смертельних наслідків.*

The health of Ukrainian youth is one of the priority areas of health policy in the sphere of protection of public health and health organization in Ukraine. Despite the fact

that most young people are of good health, a great number of them suffer from potentially fatal diseases caused by unsafe habits and addictions that are inherent to this age group.

It is known that the overall mortality rate in Ukraine is almost 1.87 times higher than in the European Union. For men, the difference is even more dramatic i.e., 2 times [1]. The primary reason for the low life expectancy of Ukrainians lies in an unhealthy lifestyle due to poor food quality and/or choices, alcoholism, and smoking. This lifestyle often results in cardiovascular diseases that are the leading cause of death in the Ukraine, killing about 400 thousand people per year.

Problems related to food quality should be considered in the context of the growth of the world population. The world population exceeded 7 billion in 2013 and is expected to reach 10 billion before the end of the century. While there is pressure for increased utilization of our natural resources, including food, to meet the needs of the growing population, environmental problems such as the accumulation of pesticides, mineral and organic fertilizers, petroleum products, and heavy metals in the soil, air and water have become increasingly common. Consequently, modern agricultural practices can be seen as a source of specific contaminants that are distributed throughout the biosphere. Contaminated plant and animal products eaten by consumers too frequently result in foodborne diseases that are a major cause of illness and death. The U.S. Government Accountability Office (U.S. GAO) reported in May 1996 that up to 81 million cases of foodborne illnesses and as many as 9,100 deaths from these illnesses occur each year in the U.S. alone. It is estimated that these diseases kill approximately 1.8 million people annually (most of whom are children) in less developed countries [2].

Since 1990, the prevalence of digestive diseases in adults in the Ukraine increased by 55% [3]. The mortality rate of digestive diseases increased 2.5 times between 1990 and 2003 in adults and in children (0-14 years), 57.1% between 1990 and 2004. In each instance these are human health problems associated with food safety and quality [4].

Under current market conditions, manufacturers try to get the most money for their products as possible and this often involves compromising product quality by making and

selling substandard and too frequently adulterated foods. Often the purchasing criterion used by businesses and consumers is not the quality of the goods but the price. This situation can lead to a significant deterioration in the health of consumers.

Food adulteration involves the fraudulent addition of extraneous, improper or cheaper ingredients to products or the removal of some valuable ingredient in order to increase profits. Food fraud includes such categories as the substitution of an ingredient with a cheaper alternative, incorrect description of the real nature of the product or one of its ingredients, incorrect quantitative ingredient declaration, and the use of unacceptable practices such as irradiation, heating or freezing [5].

Adulteration of plant products may include the addition of filth and foreign matter, cheaper components, poisonous or deleterious substances, and various intentional and incidental adulterants. Fruit juices can be adulterated by the addition of water, sugar, the pulp, seeds and peel plant products and alternative cheaper juices. Modern food manufacturing technologies may involve the addition of organic acids, beet and corn sugars, thickeners, artificial coloring and flavoring agents, preservatives, intensifiers of acidification and flavors, and other less expensive juices. Orange juice can be adulterated with monosodium glutamate, ascorbic acid, potassium sulfate, corn sugar, grapefruit solids; pomegranate juice can be diluted with grape or pear juice, sugar, and high-fructose corn syrup.

Honey is a classic object of adulteration. Sucrose syrup, sugar syrup, glucose syrup, partial invert cane syrup, corn syrup, beet sugar, dextrin, starch, unripe honey, molasses, honeydew, artificial sweeteners can be added to natural honey. Some tested samples of honey can be contaminated with heavy metals, pesticides, and antibiotics.

Adulteration of olive oil usually occurs through its dilution with alternative oils (e.g., sunflower, vegetable, hazelnut, corn, peanut, soybean, palm, walnut oil).

Adulteration of fruits and vegetables may occur through the addition of water, substitution of high-quality products by low-quality ones, sale of immature or overripe products, addition of antibiotics, preservatives, nitrates, genetically modified vegetables,

and stimulators of product ripening. Products may also be adulterated by keeping them in cold water to increase their weight, treating vegetables with malachite green that is used as a parasiticide and antibacterial agent but can contain pesticides and other undesirable chemical compounds.

Food adulterants and contaminants can act as sources of foodborne diseases. Various kinds of diseases can be caused by food adulteration (e.g., liver and vision problems, skin diseases, stomach disorders such as diarrhea). Some of these diseases are life-threatening. As a consequence improving the quality and safety of foods by developing scientific control methods is a key requisite for maintaining the health of consumers.

The over use of fast foods like grilled chicken and shawarma (a meat preparation, where lamb, chicken, turkey, beef, veal, or mixed meats are placed on a spit, and may be grilled for an extended period of time) are frequently consumed by Ukrainian youth. All of these products look appetizing, however, their slow turnover in the store, coupled with their extended exposure to relatively high temperatures can result in products that are dangerous to health, despite the seasonings and marinades. For example, the Kiev city administration has repeatedly stated that all illegal kiosks with shawarma will be closed down, however enforcement of these edicts often seems to increase their prevalence. The primary problem with excessive use of fast-foods (e.g., hamburgers, cheeseburgers, hot dogs) is that most are very high in calories and contain excessive amounts of fat but few vitamins.

In addition, the production technology of street fast food often does not utilize adequate sanitary standards. Fast food increases cholesterol, causes diseases of the gastrointestinal tract (e.g., gastritis, pancreatitis, peptic ulcers) and cardiovascular system.

Alcohol consumption, in particular beer, results in a serious problem for young Ukrainians. Beer is today perhaps the favourite and most fashionable drink of Ukrainian youth and is routinely found at almost all gatherings and meetings [6].

According to the World Health Organization (WHO), Ukrainian youth rank first in the world in alcohol consumption among children and youth. Alcoholism causes severe

disruption of the brain and endocrine organs. The former Ukrainian Health Minister Mykola Polishchuk states that alcoholism through the excessive consumption of beer, in addition to severe disruption of the brain and endocrine organs, results in infertility among women and impotence in men [7].

The attitude of the governing bodies and the media in Ukraine to the advertising of beer products is extremely surprising: none of the sports events (World Championships, national events) seem too be able to do without beer commercials which often utilize national symbols and patriotic slogans. Abundance of street stalls selling beer encourages and facilitates consumption by youth.

Another cause for the deteriorating health of young Ukrainians is smoking [8]. Tobacco smoke contains about 4,700 chemicals (for a complete list of constituents see reference [9]), including nicotine, tar, polycyclic aromatic hydrocarbons, vinyl chloride, phenols, and cadmium.

Nicotine is a highly toxic alkaloid that constitutes approximately 0.6-3.0% of dry weight of tobacco. This compound is synthesized in the roots and accumulated in the leaves of the plant. Nicotine enters the brain during smoking within 15 seconds and remains there at a high concentration for over 2 hours [10]. In low concentrations nicotine induces a stimulating effect and state of euphoria.

Cigarettes and other forms of tobacco are addictive due to the presence of nicotine. The pharmacological and behavioural characteristics of tobacco addiction indicate it is similar to that of drugs such as heroin and cocaine [11]. According to the American Heart Association “nicotine addiction has historically been one of the hardest addictions to break” [8].

Tar is purportedly the most destructive component absorbed with habitual tobacco smoking, accumulating in the smoker's lungs over time and damaging them through various biochemical and physical processes. Tar contains the majority of mutagenic and carcinogenic agents in tobacco smoke.

The composition of the smoke inhaled by smokers depends on the composition of the tobacco, its packaging, type and size of the column of tobacco, effectiveness of the filter system and the temperature of burning tobacco.

Systematic tobacco smoking is accompanied by a myriad of health problems e.g., nausea, appetite suppression, irritation of eyes, nose, and throat, ailments of respiratory system, increased heart rate and blood pressure, various forms of cancer, asthma, allergies, impotence [12].

What is current situation with smoking among the Ukrainian population and in particular, Ukrainian youth? Cigarette smoking is a major cause of morbidity and mortality in the former Soviet countries. The prevalence of individuals that smoked regularly throughout their lifetime was 80.5% in men and 18.7% in women, with the median ages for starting to smoke 17 and 18, respectively. The youngest female cohorts (born 1965-1984) were 26 times more likely to start smoking than the oldest [13].

It was found that 57 % of men and 10% of women were current smokers and an additional 21 and 7%, respectively, were ex-smokers [14]. Smoking behaviour has changed considerably over successive generations, with an increase in the proportion of women smoking and a reduction in the mean age at which smoking is taken up. Factors associated with smoking include young age, urban residence (among women), and material hardship, in particular unemployment.

In total, 41 % of Ukrainians smoke [15] and 100,000 Ukrainians die each year from smoking related diseases [16]. The percentages of Ukrainian boys and girls that smoke daily are 45% and 35% respectively. One of four teens in Ukraine began smoking at age 10. Ukraine ranks second in the world (after Chile) in the percentages of young people (i.e., 30%) between the ages of 13-15 years that smoke.

Recent data [17] indicate that the risk of starting to smoke at a young age was related to the age of the individual, exposure to tobacco advertising and related information, exposure to second-hand smoke, and having no household smoking restrictions. The prevalence of smoking among Ukrainian men (standardized for age) was

54.8% in 2001 but had increased to 66.8% in 2005. Among Ukrainian women, the incidence increased from 11.5% in 2001 to 20.0% in 2005. Smoking prevalence is increasing in most Ukrainian population groups. Men with limited education had the highest smoking prevalence. Among women, the most educated, youngest and those living in larger cities are the most frequent tobacco users; other groups are also increasing their use of tobacco. The decline in real cigarette prices in Ukraine between 2001-5 could be the primary factor explaining the recent increasing prevalence of smoking [18].

There have been attempts by Parliament and the Government to eliminate this hazardous habit, For example, Directive N 131 (June 24, 2005) concerning the approval of a complex plan to address smoking “Prophylaxis and overcoming smoking in Ukraine in 2005-2010” was passed [19]. Parliament also approved a law “About Prevention of Using Tobacco Products and its Ruinous Effect on Population Health” addressing the problem [20]. In 2006, parliament also ratified the Framework Convention on Tobacco Control (FCTC) and voted to ban smoking in public areas such as bars and restaurants [21]. While these changes were designed to reduce smoking, they have done little to alter the number of smokers.

It is a pity that some of the best and brightest representatives of our youth population – students and scholars, are smoking and either do not understand or chose to ignore the future consequences of their actions. Based on this evidence, I readily concur with the conclusions of the scientists at National University “Kyiv-Mohyla Academy” [17] that “tobacco promotion efforts appear to have been significantly more effective in the Ukraine than those for smoking control”.

**Conclusions.** The youth of Ukraine are the country's gold reserve, which requires urgent attention and care from state institutions, the media, and education and health systems. Ignoring the problems of youth will impact the health, productivity, and economic well-being of all Ukrainians.

**Acknowledgments:** The author expresses his sincere gratitude to

Professor Stanley J. Kays (University of Georgia, U.S.A.) for review and discussion of the article.

## References

1. Smoking and alcohol are the main causes of Ukrainians mortality (In Ukrainian) <http://svobodaslova.in.ua/news/read/22380> (Accessed April 27, 2010).
2. 2. RCED-98-103 Food Safety: Federal Efforts to Ensure the Safety <http://www.gao.gov/assets/160/156166.pdf> (Accessed May 21, 2013).
3. Produnchuk M.G., Koretsky V.L., Orlova N.M. About food safety of Ukrainian population (In Ukrainian) [http://www.medved.kiev.ua/arh\\_nutr/art\\_2005/n05\\_2\\_1.htm](http://www.medved.kiev.ua/arh_nutr/art_2005/n05_2_1.htm) (Accessed May 24, 2013).
4. Health indicators and use of health care resources in Ukraine for 2003-2004 years. — CMC MHP of Ukraine, 1991-2005 (In Ukrainian).
5. Capuano, E., and van Ruth, S.M. 2012. Fraud Control for Foods and Other Biomaterials by Product Fingerprinting. In: *Latest Research into Quality Control*. (Ed. by Isin Akyar). InTech, 504 p.
6. Ukrainian youth actively becomes an inveterate drunkard. Over the past ten years the number of beer alcoholics in the country has increased tenfold (In Ukrainian) [http://www.tovarish.com.ua/archive/1081/Piataia\\_po/Ukrainska\\_9938.html](http://www.tovarish.com.ua/archive/1081/Piataia_po/Ukrainska_9938.html) (Accessed January 13, 2014).
7. Teen alcoholism in Ukraine. [http://myrodyna.com/news/pidlitkove\\_pyyatstvo\\_v\\_ukrayini/](http://myrodyna.com/news/pidlitkove_pyyatstvo_v_ukrayini/) (Accessed January 19, 2014).
8. Posudin Yuriy. Smoking: historical, medical and social aspects. 2010. *Environment and Health*. № 4: 28-32.
9. 4000 chemical of tobacco smoke (In Russian) At: <http://www.doverie-clinica.ru/?page=693> (Accessed April 4, 2010).



10. Components of tobacco smoke. At: [wolfweb.unr.edu/homepage/shubinsk/smokcom1.html](http://wolfweb.unr.edu/homepage/shubinsk/smokcom1.html) (Accessed April 6, 2010).
11. Nicotine Addiction. At: <http://www.americanheart.org/presenter.jhtml?identifier=4753> (Accessed April 12, 2010).
12. Tobacco and Health. At: [http://en.wikipedia.org/wiki/Tobacco\\_and\\_health](http://en.wikipedia.org/wiki/Tobacco_and_health) (Accessed April 14, 2010).
13. Webb Charles P M; Bromet Evelyn J; Tintle Nathan L; Schwartz Joseph E; Gluzman Semyon F; Kostyuchenko Stanislav; Havenaar Johan M Smoking initiation and nicotine dependence symptoms in Ukraine: findings from the Ukraine World Mental Health survey. *Public health* (2007), 121(9), 663-72.
14. Gilmore A B; McKee M; Telishevskaya M; Rose R Epidemiology of smoking in Ukraine, 2000. *Preventive medicine* (2001), 33(5), 453-61.
15. Tobacco in Ukraine: national survey of knowledge, attitudes and behaviour. A survey of Ukrainian population by Kiev International Institute of Sociology commissioned by the International Centre for Policy Studies. Kiev, 2005.  
At: [http://www.adic.org.ua/adic/reports/Tobacco\\_in\\_Ukraine\\_ENG.pdf](http://www.adic.org.ua/adic/reports/Tobacco_in_Ukraine_ENG.pdf) (Accessed April 24, 2010).
16. Peto R. Mortality from smoking in developed countries 1950-2000, 2<sup>nd</sup> ed. Oxford. Oxford University Clinical Trial Service Unit. At: <http://www.ctsu.ox.ac.uk/~tobacco/> (Accessed April 26, 2010).
17. Andreeva T. I; Krasovsky K. S; Semenova D. S. Correlates of smoking initiation among young adults in Ukraine: a cross-sectional study. *BMC public health* (2007), 7(147), 106.
18. Andreeva T.I and Krasovsky K.S. Changes in smoking prevalence in Ukraine in 2001-5. *Tobacco control* (2007), 16(3), 202-6.
19. Complex Plan “Profilactics and overcoming smoking in Ukraine in 2005-2010” At: <http://med.com.ua/articles/27/565.html> (Accessed April 28, 2010).

20. Law of Ukraine "On measures to prevent and reduce tobacco use and its harmful effects on human health" (Bulletin of Verkhovna Rada of Ukraine, 2005, N 52, ст.565).  
<http://zakon.rada.gov.ua/cgi-bin/laws/main.cgi?nreg=2899-15> (Accessed April 29, 2010).
21. Ukraine bans smoking in public areas Kiev, March 13, 2012-10-19  
<http://www.reuters.com/article/2012/03/13/ukraine-smoking-idUSL5E8EDAPR20120313>  
(Accessed April 30, 2010).