



"THE CONSEQUENCES OF TOBACCO CONSUMPTION AND MEASURES FOR ITS PREVENTION"

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Abstract: This article provides a comprehensive analysis of tobacco products, their chemical composition, and the deleterious physiological impacts resulting from their consumption.

Keywords: nicotine, myocardial infarction, angina pectoris, bronchitis, tuberculosis, psychological disorder, carcinoma (cancer), duodenal ulcer.

The consumption of tobacco products poses a significant threat to human health. Globally, the prevalence of smoking continues to escalate at a concerning rate; particularly alarming is the increasing trend of tobacco dependency among youth and women. Drawing upon contemporary medical research, it is established that tobacco contains over twenty toxic substances, the most potent of which is nicotine. Upon inhalation, nicotine is absorbed through the pulmonary system into the bloodstream, where it exerts a deleterious impact on the cardiovascular system. This process induces vasoconstriction (the narrowing of blood vessels) and leads to systemic hypertension. Furthermore, nicotine consumption triggers tachycardia (increased heart rate), which subjects the myocardial muscles to excessive physiological stress. Chronic exposure to these conditions progressively compromises cardiac function and significantly elevates the risk of developing severe pathologies, including myocardial infarction and angina pectoris. Empirical data indicates that the incidence of cardiovascular diseases among smokers is twelve times higher than that of non-smokers. Tobacco consumption also exerts a profound neurobiological impact; it is frequently associated with insomnia and chronic cephalalgia (headaches), which ultimately lead to the dysfunction of the central nervous system.

Chronic tobacco use manifests in respiratory distress, characterized by persistent expectoration (phlegm production). Furthermore, individuals often experience dyspnea (shortness of breath) during physical exertion or rapid ambulation. In certain clinical cases, heavy tobacco consumption has been linked to the development of psychological disorders and mental health instability.

The respiratory system is particularly susceptible to the detrimental effects of smoking. The toxic constituents of tobacco smoke have been clinically observed to catalyze various pulmonary pathologies, including chronic bronchitis, tuberculosis, and most critically, malignant neoplasms (cancer) of the lungs.

The physiological impact of tobacco on the gastrointestinal system results in anorexia (loss of appetite), dysgeusia (unpleasant taste sensations), and the dysfunction of the salivary glands. When nicotine-laden saliva is ingested, it irritates the gastric mucosa, leading to pyrosis (heartburn) and the hypersecretion of gastric acid. These pathological changes are primary contributors to the development of peptic ulcers and duodenal ulcers.

In the field of pediatrics and obstetrics, it is well-documented that parental tobacco dependency can lead to spontaneous abortion or stillbirth; infants born to smoking parents often exhibit congenital frailty and compromised immune systems. Chronic tobacco use, or nicotine



addiction, can further lead to severe sensory impairments, including optic atrophy or permanent blindness. Furthermore, the concentration of toxins in exhaled mainstream and sidestream smoke is remarkably high, subjecting non-smokers to passive smoking (second-hand smoke), which poses involuntary health risks.

Nicotine is a potent psychoactive substance that, much like alcohol, interferes with metabolic processes and alters neurophysiological functions. This interference facilitates the development of physical dependence. Once the organism acclimates to a constant influx of nicotine, cessation triggers withdrawal symptoms, including acute anxiety and psychological distress. Over time, the physiological craving for tobacco may become as fundamental to the individual as the biological necessity for nutrition.

According to the World Health Organization (WHO), tobacco consumption exacerbates the development of more than 25 distinct pathologies, primarily focusing on cardiovascular, pulmonary, and oncological diseases. Longitudinal research conducted by the British Medical Research Council has provided substantial clinical evidence establishing a direct causal link between smoking, bronchogenic carcinoma (lung cancer), and myocardial infarction. Statistical analysis reveals that 70% of fatalities resulting from ischemic heart disease and stroke are attributed to individuals who consume tobacco and alcohol. Furthermore, actuarial data suggests that chronic smokers reduce their total life expectancy by an average of 18 years. Global health metrics provided by the WHO indicate that approximately 6 million people succumb annually to the deleterious effects of tobacco. Notably, 12% of these deaths occur among non-smokers, categorized as passive smokers, who are involuntarily exposed to environmental tobacco smoke (ETS).

Regrettably, children are increasingly becoming victims of passive smoking, inhaling ambient air contaminated by environmental tobacco smoke from those around them. Scientific research has conclusively demonstrated that even secondary exposure to tobacco smoke significantly elevates the risk of morbidity, permanent disability, and premature mortality. Furthermore, smokers with pre-existing pulmonary impairment experience more severe clinical progressions of coronavirus-induced pneumonia. According to American researchers, severe complications associated with COVID-19 are significantly more prevalent among the smoking population compared to non-smokers. This is partly due to the fact that tobacco smoke inhibits interferons, the signaling proteins essential for the immune system's primary antiviral response. Globally, over a hundred methodologies for smoking cessation have been developed. From a psychological perspective, the most critical phase of cessation is the management of the initial 72-hour withdrawal period, which represents the most challenging hurdle for the individual.

Nicotine is considered one of the most toxic substances known. It is rapidly absorbed into the systemic circulation, reaching all vital organs via the bloodstream within a span of merely seven seconds. As an extremely potent toxin, the lethal dose for humans is approximately 50 mg. A single instance of tobacco consumption results in the ingestion of roughly 1 mg of nicotine into the body. Every individual, upon their initial exposure to smoking, experiences adverse symptoms such as vertigo, cephalalgia, nausea, and general asthenia. These acute reactions gradually dissipate as the individual transitions into chronic tobacco dependency.

Furthermore, tobacco consumption exerts a deleterious influence on various organ systems, primarily targeting the cardiovascular and respiratory structures. The incidence of myocardial



infarction is twofold higher among smokers compared to non-smokers. Individuals who smoke are 8 to 15 times more susceptible to pulmonary emphysema and 3 to 5 times more likely to develop aortic aneurysms. Approximately one in seven smokers develops thromboangiitis obliterans (endarteritis obliterans), which subsequently leads to gangrene of the lower extremities.

Among men over the age of 45, 30% of diagnosed pathologies are directly correlated with a predisposition to smoking. In the 40–49 age demographic, the mortality rate is three times higher for smokers than for non-smokers, while in the 60–64 age group, the mortality rate increases to 19 times higher. For those engaged in physical education and athletics, smoking produces even more severe physiological consequences by compromising cardiovascular and respiratory performance metrics.

Research involving smoking athletes indicates a significant decline in their psychophysiological state. Specifically, their motor reaction speed is 8–14% lower than that of non-smoking athletes, accuracy in response is reduced by 16–21%, and muscular precision is diminished by 11–15%. These findings have been rigorously substantiated through the investigations conducted by British physiologist G. Kennedy and Swedish physiologist A. Hugga. Among the diseases resulting from tobacco use, the most perilous is respiratory tract cancer, which occurs 20 times more frequently in smokers. Additionally, smokers exhibit higher rates of esophageal, pancreatic, bladder, and renal malignancies, leading to millions of fatalities globally each year.

According to data provided by the World Health Organization (WHO), the physiological benefits of smoking cessation are observable almost immediately. Within 20 minutes of cessation, the heart rate (heart contraction frequency) begins to decelerate. Within 12 hours, the concentration of carbon monoxide in the blood returns to normative levels. Over a period of 2 to 12 weeks, systemic blood circulation improves, and pulmonary function begins to stabilize. Within 1 to 9 months, there is a significant reduction in chronic coughing and dyspnea (shortness of breath). In the long term, the risk of stroke diminishes to that of a non-smoker within 5 to 15 years. Within 10 years, the mortality risk associated with lung cancer is reduced by half compared to those who continue to smoke. Finally, within 15 years, the risk of developing cardiovascular diseases reverts to the baseline risk level of a non-smoking individual.

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