
OCCUPATIONAL RISK FACTORS FOR WORKERS OPERATING IN HOT CLIMATES: THE CASE OF TRAFFIC POLICE OFFICERS

Jalolov N. N.,
Umedova M. E.,
Ikramova N. A.

In the context of climate change, global warming, and urbanization, the health of professionals working outdoors—particularly traffic police officers (TPOs)—is becoming an increasingly urgent issue. Their working conditions involve constant exposure to direct sunlight, high temperatures, low humidity, dust, vehicle emissions, noise, and stress, all of which contribute to occupational health risks.

According to the World Health Organization (WHO), the risk of developing cardiovascular and respiratory diseases among workers in high-temperature environments doubles. Despite this, there is still insufficient hygienic assessment and in-depth study of the occupational risk factors for professionals working in such conditions.

This thesis presents a comprehensive analysis of occupational risk factors affecting TPOs operating in hot climates, based on available scientific literature, international organization reports, and statistical data.

Heat and Thermal Stress

According to WHO (2021) guidelines, working in temperatures above +37°C can cause heat stress, dehydration, increased heart rate, elevated blood pressure, and decreased cognitive performance. During summer, TPOs often spend more than 8 hours a day directly under the sun. The British Medical Journal (BMJ) reports that such conditions increase the risk of heart attacks by 1.5 times.

Air Pollution and Vehicle Emissions

Summer heat, combined with a high number of vehicles, increases the levels of nitrogen dioxide (NO₂), carbon monoxide (CO), dust, and benzene in the air. A 2022 study published in Environmental Health Perspectives found that workers exposed to high levels of air pollution have a 30–40% higher risk of cardiovascular and bronchopulmonary diseases.

Noise and Psychological Load

The density of traffic flow and constant vehicle signals and noise exert pressure on the central nervous system. According to WHO, in working environments where noise levels exceed 70 dB, there is an increased risk of heart rhythm disorders and chronic fatigue syndrome, directly affecting both work efficiency and health.

Medical Indicators Based on Analytical Findings

Scientific sources from Russia, India, Turkey, the USA, and Uzbekistan report that during summer, traffic police officers exhibit:

- an average increase in blood pressure by 10–15 mmHg,
- a 15–20% increase in heart rate,
- signs of thermal fatigue and dehydration in 50–60% of workers.

These conditions reduce work efficiency, shorten professional activity duration, and necessitate the strengthening of occupational safety measures.

Conclusion

1. TPOs operating in hot climates are exposed to high-risk conditions that are scientifically proven to have serious negative impacts on health.
2. The analysis based on scientific literature and international studies shows a high likelihood of disorders in cardiovascular function, nervous system regulation, and thermoregulation mechanisms among TPOs.
3. It is essential to mitigate the impact of external environmental hazards, implement the use of personal protective equipment, introduce hygienic preventive measures, and establish a system of regular medical monitoring.

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