

**Medical Biological Evaluation of Electroshock Stun Guns Efficiency**  
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The analysis of literature available data and the results obtained from our own investigations provide reliable evidence that the effect of electroshock stun guns (ESG) on biological objects is of complex nature. This effect depends upon ESD electric performance data, exposure duration, functional state of biological object systems and environmental conditions. Besides, the effect was found to vary from minor to lethal, and the clinical indices observed are of different severity extent.

The results obtained show that the effect of a standard ESG is displayed as declination of cerebral cortex biological activity and phase changes in respiration of a short-term duration (in our case up to 3 min). In parallel, an insignificant stress response of peripheral blood system was detected.

The increases of power, performance current parameters and voltage resulted in more pronounced reduction of CNS biological activity and respiration inhibition. However, these changes were again of a short-term duration and manifested within the first three minutes after exposure.

The increases of impulse series frequency and total impulse duration were found to accelerate the decrease in CNS activity and intensify the inhibition of respiration. The injury was longer lasting and seen throughout the whole period of observation (over 5 min). The peripheral blood system demonstrated a sharply pronounced stress response.

Thus, the results obtained from the present investigation allow to regard with a certain reliability degree the following ESG performance data as influential determinants of shocker injurious effect: action power, impulse series frequency and total impulse duration. Along with that, the respiration system undergoes most crucial changes since its injury is associated with both the enhancement and inhibition of the respiratory center.

**Keywords:** electroshock, stun guns, injury, CNS.