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INFLUENCE OF A MAGNETIC FIELD IN THE RANGE OF ELF OF INTENSITY 26.7 μT, 44.5 μT AND 89 μT ON REACTIVE OXYGEN SPECIES PRODUCTION BY NEUTROPHILS *in vitro*

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The influence of the magnetic field (MF) generated by a special generator-Viofor JPS upon the extramitochondrial oxygen metabolism of human neutrophils *in vitro* has been investigated. Neutrophils are highly specialized white blood cells. Their basic function is the destruction of phagocytized microorganisms. One of intercellular destruction mechanisms of pathogens is production of reactive oxygen species (ROS), called oxidative burst. The ROS production *in vitro* cultures is low, therefore PMA (phorbol 12-myristate 13-acetate) was used as a stimulator. The blood from healthy volunteers was used for the purpose of the study. The examined samples were incubated in alternating magnetic field in the range of ELF, on three different induction levels for 30 minutes. The respiratory burst was estimated via flow cytometry by using the intracellular oxidative transformation of DCHF-DA (2',7'-dichlorofluorescin diacetate) to the fluorescent DCF (2',7'-dichlorofluorescin). The magnetic field was the type M_1P_3 and was generated by generator Viofor JPS. The levels of intensity were: 26.7 μT, 44.5 μT and 89 μT. Statistically significant decreasing of ROS production by neutrophils stimulated with PMA was observed when the intensity reached 44.5 μT and 89 μT. The difference in respiratory burst between native samples and those influenced by MF was also statistically significant when the intensity was 44.5 μT and 89 μT. Statistically significant decrease in ROS production of non-stimulated PMA neutrophils was observed when the intensity level was 89 μT. Our results show that the lowest value of magnetic field intensity (26.7 μT) does not influence neutrophils respiratory burst.