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TITLE: Disinfection of water in swimming pools by combined action of UV-light and ozone
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ABSTRACT BODY:
Abstract: Operation of swimming pools requires a complex of measures for filtering and disinfection of water. The use of UV-technologies for disinfecting water in swimming pools allows completely eliminate pathogenic microflora and does not result in formation of toxic compounds in the process of decontamination. It is known, however, that UV-light decontamination by itself does not meet the requirements of the general microbiological number of CU/cm^3. In this study we propose the technology of combined water disinfection in swimming pools using UV radiation and ozone formed by UV light with wavelengths shorter than 240 nm via photolysis of the oxygen molecule. The study of the effectiveness of bactericidal decontamination of water using the installation was carried out in a pool of 75 m^3. This setup provides a dose of irradiation of water not less than 25 J/m^2 and additional ozonation with an amount of ozone of approximately 0.1 g per cubic meter of water. The two types of installations with capacity of 8 m^3/h were created in order to ensure circulation of water at least 4 times per day. As a result of additional ozonation, the microbiological number did not exceed 20 CFU/cm^3 and the residual concentration of ozone in the water did not exceed 0.015 mg/l.