

Abstract Submitted  
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**Applications of plasma sources for nitric oxide medicine<sup>1</sup>** VICTOR VASILETS, V.L. Talrose Institute for Energy Problems of Chemical Physics, RAS, ANATOLY SHEKHTER, I.M. Sechenov First Moscow State Medical University, ALEXANDER PEKSHEV, N.E. Bauman Moscow State Technical University — Nitric oxide (NO) has important roles in the function of many tissues and organs. Wound healing processes are always accompanying by the increase of nitric oxide concentration in wound tissue. These facts suggest a possible therapeutic use of various NO donors for the acceleration of the wound healing and treatment of other diseases. Our previous studies [1] indicated that gaseous NO flow produced by air-plasma generators acts beneficially on the wound healing. This beneficial effect could be caused by the mechanism involving peroxynitrite as an intermediate. As a result of mobilization of various antioxidant reactions more endogenous NO molecules become available as signaling molecules. to regulate the metabolic processes in wound tissue. In this paper different air plasma sources generated therapeutic concentrations of NO are discussed. The concentration of NO and other therapeutically important gas products are estimated by thermodynamic simulation. Synergy effects of NO with other plasma components are discussed as a factor enhancing therapeutic results. Some new medical application of plasma devices are presented.

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