

**Prehemolytic changes in human erythrocyte membranes induced by gamma radiation under air and nitrous oxide**

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Human erythrocyte suspensions in 0.1 M Na-phosphate buffer, pH 7.4 with hematocrit of 2% were irradiated in an atmosphere of N<sub>2</sub>O or air. Erythrocytes irradiated in the air underwent hemolysis after a dose 3.5 kGy. However, hemolysis did not occur under N<sub>2</sub>O after a dose of 12 kGy (hemolysis was measured 1.5 h after the end of irradiation). Conformational changes in membrane proteins were studied using a maleimide spin label in the prehemolytic doses and the level of lipid peroxidation was determined. In erythrocytes irradiated under air far greater changes were observed in protein conformation than under N<sub>2</sub>O. The level of lipid peroxidation started to increase from the dose of 1 kGy in the air, however under N<sub>2</sub>O a significant increase in lipid peroxidation occurs only above a dose 3.5 kGy.