

## **The effect of ozonation of blood on white blood cell integrity.**

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The interest in ozone as an alternative form of medicine is growing rapidly. Unfortunately, claims that it stimulates the immune and antioxidant systems rest on sketchy results. Since ozone is a potent oxidant, one can expect it to cause cell damage when high doses are used. Thus, we used 6 healthy male baboons to assess the effect of ozonation on white blood cell integrity. Blood (5% of blood volume) was collected in heparin. The blood was transferred to 50 ml siliconised glass syringes. The blood was then mixed with an oxygen/ozone gas mixture containing 3.5-4.0% (80  $\mu\text{g}/\text{ml}$ ) ozone. One ml of blood was mixed with one ml of the gas for 20 minutes. The ozonated blood was reinfused into the baboon. Blood was collected in EDTA before reinfusion and again 0.5, 1.0, 4.0, 24 and 48 hours after reinfusion. White cell integrity was assessed morphologically using blood stained with May-Grnwald-Giemsa. The DNA integrity and repair capacity of white cells was assessed using single cell gel electrophoresis (Comet assay). Ozonation of blood did not affect white cell morphology. Ozonation did not increase DNA damage but markedly increased the capacity of DNA to repair itself. Thus, ozonation of blood does not induce severe oxidative damage to DNA of white blood cells. The possible risk of ozone therapy having genotoxic effects seems to be minimal. White blood cells appear to have good resistance against the oxidative effects of ozone, probably due to the action of antioxidant enzymes.