

Human Tolerance for Ozone

The graph below shows the various concentration/time relationships for human exposure and response to ozone. Exposure to ozone levels below 1 ppm for as long as 10 minutes is nonsymptomatic. Exposure to doses of 100 ppm for 10³ minutes or 10³ ppm for 0.5 minute can be fatal. Humans can usually detect ozone in the atmosphere at levels of about 0.001 ppm.

Dr. I. Joseph Bollyky, Ph.D. has discussed the biological effects of exposure to ozone at levels and times in the symptomatic zones. These include increased pulmonary flow resistance, decreased carbon monoxide diffusing capacity, and decreased lung elasticity. Exposure to 1.5 to 2 ppm of ozone for 2 hours produces dryness of mouth and throat, constrictive chest pains, lessening of mental ability, difficulty in coordinating and articulating, loss of appetite, coughing, and 13% loss of vital capacity. However, recovery from these symptoms usually is complete in 1 to 14 days.

