

Effect of Chlorine Dioxide Gas of Extremely Low Concentration on Absenteeism  
of Schoolchildren

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## Abstract

Gas-generating devices of chlorine dioxide ( $\text{ClO}_2$ ) are used as deodorant of rooms. We happened to use a commercial tabletop deodorant canister that releases extremely low-concentration  $\text{ClO}_2$  gas in a school classroom as deodorant. We found retrospectively and unexpectedly that during a period of 38 consecutive school days the rate of schoolchildren absent from the school was markedly lower (1.5%) in a classroom where the  $\text{ClO}_2$  device was placed than that (4.0%) in a classroom where it was not placed. The percentages of absenteeism between these classrooms (1.5% vs. 4.0%) were significantly ( $p < 0.00001$ ) different. The predominant causes of absenteeism during the period were common cold and influenza. Judging from the known virucidal activity of  $\text{ClO}_2$ , our unexpected finding in the school classrooms strongly suggests the usefulness of extremely low-concentration  $\text{ClO}_2$  gas to prevent respiratory viral diseases in semi-closed areas, such as theaters, hospitals and aircraft, without necessitating evacuation.