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IMPACT OF KEROSENE PORTABLE HEATERS ON INDOOR CO CONCENTRATIONS

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Increases in home heating costs have helped develop a market for portable kerosene heaters. These equipments have a major inconvenient: they reject combustion gases inside the housing. Aim of this study is to investigate chronic CO exposure due to portable kerosene heaters. Twenty-three voluntary homes in agglomeration of Lille (France) were equipped, during two weekly periods ('summer' and 'winter'), of CO analyzers. Volunteers completed time-activity diaries. Data were collected concerning potential CO sources in the housing, and also impact of the CO measurement results on practice of heating and ventilation. The 23 studied homes (majority of detached housing) are occupied by 62 people and equipped by 32 kerosene heaters (ages and models very diverse). These equipments are mainly used as principal heating system (> 6 h/day) whereas they are designed to be used as extra heater. In winter, the average of the weekly CO concentrations on the 23 residences is 2.07 ppm. The 8 hours recommendation of WHO (10 ppm) was exceeded in 4 locations. Following the campaigns, all the volunteers claimed to be more aware to CO exposure problematic and 53 % want to change their practices of ventilation. However, 93 % will continue to use their kerosene heater. In spite of an obvious awakening of the risks related to CO, the radical change of heating system is rare, mainly for economic reasons.