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DIOXIN LEVELS IN BLOOD OF RESIDENTS AND INCINERATOR WORKERS IN URBAN AREA OF KOREA

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In Korea, the number of municipal and hazardous waste incinerators have been increasing since the 1980s. In addition, municipal waste incinerators (MWI) are almost always located in residential areas. Therefore, the human health risk caused by dioxin has become a growing public concern in Korea.

In this report, we describe the results of study in which serum levels of PCDDs/PCDFs in a group of workers at the MWI were compared to those in a comparison group of community residents who had never worked at the MWI.

The blood samples were obtained between 2001 and 2002 from volunteer workers of the MWIs and residents living near to the MWIs in urban area of Korea. The MWI worker group was 28 employees (36 old years, 4.7 years of working durations) at the MWIs in urban area and the residents group was 49 community residents (48 years of age) living at distance < 300m from the MWIs. For background exposure, the general group was 11 adults (29 old years) living in the urban area not including the MWIs. The participants answered a detailed questionnaire regarding the sociodemographic variables, lifestyle, possible exposure through occupational and non-occupational contact the locations of their former and present residences, and their food intake patterns.

The detection ranges of dioxin in group were 5.4425.02 pg/g lipid, 5.6329.33 pg/g lipid, and 5.3213.46 pg/g lipid for workers, residents and general, respectively. The average levels of dioxin were 14.93 pg/g lipid, 15.19 pg/g lipid, and 12.37 pg/g lipid for workers, residents and general, respectively. The levels of dioxin in blood were not significantly different between the groups, whereas a significant correlation between the age of the subjects and the levels of dioxin in blood could be observed. Finally, no significant differences of dioxin-levels in blood were found in relation to the specific residential area.