

10176-Vertical Difference in Ambient VOC Levels of High-Rise Apartment Buildings
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When there are potential vertical variations in ambient air pollution levels, this should be considered when evaluating the exposure of residents living in high-rise apartment buildings. Accordingly, the current study examined whether ambient VOC concentrations vary according to the apartment floor in a Korean metropolitan area, while also assessing the potential influence of atmospheric stability and sampling period on the exposure level of the apartment residents. Thirty apartment buildings with 10 or more stories were surveyed in both winter and summer. Atmospheric stability and sampling period were found to have a possible influence on the variation in the ambient concentrations according to the floor level in the high-rise apartment buildings. Accordingly, the current findings emphasize the need to consider these factors for the vertical variation of urban air pollutants when evaluating the exposure of the high-rise apartment residents. Moreover, the ambient concentrations of all target compounds were significantly higher in the winter than in the summer for both the low and high floors. The proportions for the low floors were similar to those for the high floors, plus the target compounds exhibited a significant correlation among themselves for both the low and high floors, thereby indicating similar sources and sinks for the target VOCs.

Keywords: Atmospheric stability; High-rise apartment buildings; Sampling period; Season; Vertical variation

10177-Evaluation of VOC Levels Relative to Proximity to Dyeing Industrial Complex
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The current study measured the ambient levels of benzene, toluene, isomeric xylenes and methyl tertiary-butyl ether (MTBE) at two industrial areas within the boundary of the Daegu dyeing industrial complex (DDIC) and at two residential areas with a different proximity to the DDIC. In addition, residential indoor levels were also measured concurrently to examine whether the anticipated elevated ambient toluene levels increased the residential indoor air levels. The findings suggest that toluene ambient levels measured in a residential area near the DDIC can be used as an indicator of odor-causing unidentified air pollutants transported from the DDIC. Plus, toluene was shown to be an important pollutant as regards the environmental exposure of residents nearby the DDIC. The median toluene values for industrial sites A and B were 371 and 387 $\mu\text{g}/\text{m}^3$, respectively. The median toluene value for the ambient air samples from residential area A located nearby the DDIC (281 $\mu\text{g}/\text{m}^3$) was 8 times higher than that from residential area B located further away from the DDIC (34.7 $\mu\text{g}/\text{m}^3$). Moreover, it was found that the elevated ambient toluene levels outweighed the indoor sources with respect to the environmental exposure of residents nearby the DDIC. Meanwhile, for the other target VOCs, the DDIC did not appear to be a major contributor to the nearby residential levels.

10488-Swiss Environmental Medicine Project

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OBJECTIVES: The environmental medicine project Basel, Switzerland, aims at diagnosing and consulting patients who relate their illnesses to environmental exposures. **METHODS:** All participants in the study had three baseline examinations. These included a medical examination with emphasis on allergology and internal medicine. Besides routine screening regarding allergy, haematology and lung function, further tests were performed if necessary. Standardised psychological questionnaires had to be filled in and two types of psychodiagnostic interviews (semi-/computer structured) were carried out. All participants were visited at home by the corresponding environmental office in order to assess possible environmental exposures. As a standard, several indoor climate parameters were measured, additional measurements were carried out if indicated; electromagnetic fields (EMF) were determined if patients attributed their illness specifically to EMF. All results were discussed in a case conference and subsequently, counselling was offered to the participants. **RESULTS:** 59% (40) women and 41% (28) men participated in the study, of which 61 completed the protocol. Mean age of participants was 54 years, median of duration of illness was 3 years. Most of the participants complained about non-specific symptoms such as exhaustion, sleep disturbances, headaches, etc. which accounted for 36% (53 of 147) of all named symptoms, followed by irritation of eyes, nose, throat or lung 27% (39) and gastrointestinal complaints 8% (12). The environmental exposures that were most often named by the participants were: exposures to chemicals of indoor source 36% (47 of 130) followed by electromagnetic fields 19% (25) and exposures to chemicals of outdoor source 19% (25). In a multiple cause model, plausible medical reasons for complaints were found in 47% (24), psychological causes accounted for 43% (21) and environmental causes for 17% (9) of the cases. Participants' individual concept of etiology of illness was rated not plausible in 43% (22), partially plausible in 35% (18) and plausible or very plausible in 22% (11) cases. **CONCLUSIONS:** Except for one case, all participants had illnesses that could only be analysed by an interdisciplinary team. Especially complaints attributed to EMF are a new challenge for GPs, environmental offices and psychiatrists that still have to be investigated. Although such an interdisciplinary approach to environmental illness is very time consuming, it is necessary in order to be able to give adequate medical, psychological and environmental advice to people who relate their illnesses to environmental exposures. This interdisciplinary approach is especially useful for the environmental offices – whether it is a helpful support for patients will have to be further evaluated.

10752-Mold levels inside and outside the homes of children with asthma in Southern New England, USA.

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Background: Exposure to environmental mold, indoors or out, is a potential risk factor for exacerbation of respiratory symptoms in childhood asthma. Understanding the differences in fungi found in and around a home can help in assessing health effects of exposures to mold. **Methods:** Airborne mold samples were collected from the main living room and from a location outside of the home for 491 children screened for participation in a year-long prospective study of symptom severity in childhood asthma. Samples were collected using a Burkard portable air sampler with dichloran-18% glycerol (DG-18) agar. Fungi were identified to the genus level and recorded as colony forming units per cubic meter (CFU/m³). Air temperature and relative humidity indoors and out were also recorded at the time of sampling. Samples were collected at the time of the screening home visit which could occur at any time of year. **Results:** The mold concentrations were quite variable ranging from zero to over 15,000 CFU/m³. Total mold counts, both indoors (mean = 1568.3 CFU/m³) and out (1424.6 CFU/m³), were significantly correlated with each other and with temperature and relative humidity (p<0.001). In general, the lowest mold counts indoors and out were observed in the samples collected in the winter (means of 1130.1 and 705.8 CFU/m³, respectively), the coldest and driest season of the year, while the highest mold counts were observed for samples collected in the summer (1776.7 and 1638.5 CFU/m³, respectively) - the hottest and most humid season. On the genus level, *Cladosporium* is the most common mold in both indoor and outdoor air in any season. *Cladosporium* and *Alternaria* had significantly higher concentrations outdoors than indoors (p<0.005), while concentrations of *Aspergillus* and *Penicillium* were higher indoors, although not significantly so (p>0.10). **Conclusion:** The variability in type and concentration of mold from indoors to out and from season to season should be taken into consideration when trying to make assessments of exposures.