

Integrated evaluation and management of indoor air quality in modern office buildings

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PRESENTATIONS

Topic	Speaker	Affiliation
Indoor air quality and health effects in modern office buildings	Kenichi Azuma	Dept Environmental Medicine and Behavioural Science, Kindai University, Osaka, Japan
Impact of seasonal indoor dryness on nasal mucociliary transport velocity, airway hydration and diseases of united airways	Walter Hugentobler	Laboratory of Atmospheric Processes and their Impacts, School of Architecture, Civil & Environmental Engineering, École Polytechnique Fédérale de Lausanne, Switzerland
Environmental Indoor Intolerance with focus in office workers	Markku Sainio	Helsinki University Hospital, Helsinki, Finland
Integrated evaluation and management of indoor air quality in modern office buildings	Paolo Carrer – Peder Wolkoff	Occupational and Environmental Health Unit, Dpt. of Biomedical and Clinical Sciences “Luigi Sacco”, University of Milan, Milan, Italy

BACKGROUND

Building-related symptoms (BRSs) have emerged as an occupational and environmental health issue since the early 1970s. Indoor air quality in the modern office buildings continues to be an issue of concern, in particular low indoor air humidity conditions are frequent in these office buildings. Effects on health status of the workers are reported with high prevalence and cause a substantial economic burden and loss of work performance.

An increasing attention is to the impact of seasonal indoor dryness on ocular surfaces and recently also on upper airway hydration and related symptoms/diseases. Indoor dryness can be important not only for exacerbations but also as a co-factor for the occurrence of chronic airway diseases like chronic bronchitis and COPD in tandem with air pollution and infections. Very relevant is also the role of environmental indoor intolerance and the synergies with personal and work-related psychosocial work stressors on health and work performance.

Non-specific building-related symptoms are prevalent and increasing evidence supports that this condition previously known as sick building syndrome belongs to environmental intolerances, such as multiple chemical sensitivity and noise sensitivity. Medically, they can be classified as functional disorders. Studies of individuals with severe intolerance demonstrate that reactivity is not explained by biological effects of exposure but their nocebo (=negative) meanings and conditioned reactions. These mechanisms explain human reactions from mild annoyance to severe intolerance. In case of indoor air problems, objective or subjective, multifactorial human and environmental causes for symptoms must be considered. Exposure focused actions may increase risk perception and thus induce annoyance and environmental intolerance.

From the perspective of managing IAQ in office environments, the key question is how indoor air pollution, microclimatic parameters (temperature, indoor air humidity), occupational factors (e.g., VDU work), psychosocial work stressors and the risk perceptions of the occupants exacerbate each other by interplaying mechanisms.

AIMS AND SCOPE

This workshop is promoted by the “Indoor Air Quality and Health” scientific committee of the International Commission on Occupational Health (ICOH).

Data from nationwide cross-sectional questionnaire survey, nested cross-sectional surveillance and one-year longitudinal study in modern office buildings will be presented.

The workshop will focus on how the microclimatic conditions interplay with personal and occupational factors deteriorating ocular health, airway health, and work performance.

A review of studies of individuals with severe intolerance will be presented to understand the mechanisms of this reactivity to the indoor environments.

An integrated approach based on the recent evidence for risk assessment and specific indoor problem solving, through an integration of building assessment, questionnaire survey, and environmental measurements will be presented.