

1416

SAFETY CONSIDERATIONS FOR REMEDIATION WORKERS AFTER DISASTERS WITH INDOOR WATER DAMAGE, DAMPNES AND BIOAEROSOLS

¹E Johanning*, ²P Auger, ³S Viegas, ³C Viegas. ¹Columbia University, New York, New York, USA; ²Department of Public Health Quebec City, Québec, Canada; ³Lisbon School of Health Technology, ESTeSL/IPL, Portugal

10.1136/oemed-2018-ICOHabstracts.547

Introduction Adverse health outcomes from bioaerosols encountered during the clean-up of indoor environments after disasters or flooding resulting in fungal growth and bio-contamination have been documented. The naive cleaning and restoration of salvaged buildings, furniture and personal items may result in skin contact and inhalation exposure to a mixture of biological compounds with infectious, allergenic, irritant or toxic properties (i.e., mycotoxins).

Methods Review of current safety practices and recommendations by governmental and professional organisations for hygiene and personal protective equipment (PPE) of remediation workers in North America and Europe.

Results A consensus exists that acceptable and safe threshold limits for fungal and bacterial indoor exposure cannot be established. It is generally recommended to control indoor bioaerosol exposures. The route of exposure and target organs of the biological agents may differ (infectious, allergic or toxic effects), is often complex and unpredictable. To capture fungal metabolites (mycotoxins) filters with small pore sizes, namely 0.2 µm are needed. Nevertheless, US governmental agencies focus on a recommendation of N-95 disposable respirator, for respiratory protection, besides gloves and eye protection, but no specific PPE is required. The adequacy, effectiveness and protective level of such a respirator has been questioned. In Canada, clean-up guidelines exist but are not mandated. In Germany, comprehensive rules exist and technical provisions for dust control and PPE are mandated. In Portugal no technical recommendations regarding the type of PPE exist. The medical fitness and surveillance of remediation workers has not been further addressed in any of the guidelines, although this would be prudent based on the pathological profile of bioaerosols. **Conclusion** The release of bioaerosols should be controlled with proper containment similar to asbestos remediation projects. The goal of any PPE should be to protect from any contact to the bioaerosols. Medical fitness and monitoring for large scale projects would be prudent.

1687

INDOOR AIR QUALITY IN MODERN OFFICE BUILDINGS

¹Paolo Carrer*, ²Peder Wolkoff*. ¹Dpt. of Biomedical and Clinical Sciences, University of Milan, Milan, Italy; ²National Research Centre for the Working Environment, Copenhagen, Denmark

10.1136/oemed-2018-ICOHabstracts.548

Aim of the special session To review the indoor air risks and the related health effects in modern office buildings in order to promote an integrated approach for indoor air quality risk assessment and management.

¹Paolo Carrer, ²Peder Wolkoff, ³Markku Sainio, ¹Paolo Carrer
¹Dpt. of Biomedical and Clinical Sciences, University of Milan, Milan, Italy

²National Research Centre for the Working Environment, Copenhagen, Denmark

³University of Milan, Milan, Italy

1687a

INDOOR AIR QUALITY AND HEALTH EFFECTS IN EUROPEAN MODERN OFFICE BUILDINGS

Paolo Carrer. Dpt. of Biomedical and Clinical Sciences, University of Milan, Milan, Italy

10.1136/oemed-2018-ICOHabstracts.549

Introduction The European project OFFICAIR (funded from the European Union FP7) was aimed at broadening the existing knowledge regarding indoor air quality (IAQ) in modern office buildings, i.e., recently built or refurbished buildings, across Europe.

Methods A survey was performed in 167 modern office buildings (7440 office workers) from 8 European countries (ES, FI, FR, GR, HU, IT, NL and PT) by a self-administrated on line questionnaire and a walk-through into the building with compilation of checklists. The questionnaire mainly investigated the environmental perception and symptoms correlated to IAQ. In a subset of 35 buildings also IAQ air quality parameters were investigated.

Results Indoor air concentrations of volatile organic compounds and ozone were lower than their respective WHO air quality guidelines; those of acrolein, α-pinene, and d-limonene were lower than their estimated thresholds for irritative and respiratory effects; the indoor concentrations of PM_{2.5} appeared high when compared to the 24 hour and annual WHO air quality guidelines. Frequent negative environmental perceptions (>30%) for air too dry, air stuffy, air smelly, noise from inside building in modern office buildings and frequent eye symptoms (>20%) were reported. Environmental perceptions were associated to mould growth, acoustical solutions, cleaning activities; symptoms were associated to number of occupants, lack of operable windows, presence of carpet, and cleaning activities. Office workers with high efforts and low rewards had a higher risk of building related symptoms suggesting complex effects of psychosocial factors on symptoms.

Discussions In modern office buildings, the occupants often complain negative environmental perceptions and eye symptoms. A team approach in order to evaluate and manage indoor air quality is recommended, through an integration of building assessment, questionnaire survey, and indoor air quality measurements. Psychosocial environment should also be considered in order to provide a healthy work environment.

1687b

INDOOR AIR HUMIDITY AND HEALTH – AN OVERVIEW

Peder Wolkoff. National Research Centre for the Working Environment, Lersø Parkallé 105, 2100 Copenhagen, Denmark

10.1136/oemed-2018-ICOHabstracts.550

Introduction It is salient to distinguish between ambient humidity (relative (RH) or absolute) near the breathing and ocular zone and phenomena caused by moisture-damage of the building construction and emissions therefrom. This paper summarises state-of-the-science knowledge about the impact of RH on a number of important health and comfort outcomes in indoor environments.

Methods The overview integrates studies about how 'extended' exposure to low RH (or absolute) impacts health, sensory effects in the eyes and airways (sensory symptoms), transmission and survival of influenza virus, work performance, sleep quality, and impact on the vocal cord. Effects by moisture damage of construction products are excluded.

Results There is evidence that humidified indoor air can positively impact eye symptomatology, but not sensory irritation in