Editorial

Damp Indoor Spaces and Health

The quality of living space plays an important role for human health in a variety of ways. Over the past few years, dampness and mould infestation were shown to have a significant impact on well-being and health. While this type of damage to buildings has been known for centuries, comparatively little research has been done on this problem. There is a scarcity of data due to deficits in detecting, identifying and assessing the exposure parameters as well as the health problems which can arise from dampness and indoor mould. The mechanisms of pathogenesis associated with mould infestation and the various components of mould (spores, cell wall components, extracellular polysaccharides) as well as metabolites (MVOC, mycotoxins) or bacterial endotoxins are largely unknown. The technical capabilities of detecting these in indoor air and dust still are quite limited, and have often not been validated scientifically. Furthermore, the dearth of knowledge about interactions between single substances and groups thereof with other indoor toxins as well as differing susceptibilities of the occupants limits assessment. It is therefore not currently possible to properly assess the health risk posed by indoor dampness and mould damage or lay down threshold or target values for the health burden posed by indoor mould.

Despite the vast profusion of studies on the health hazards resulting from exposure to mould, data on this problem remain scarce. Compared to the great number of studies on the possible health hazards, the number of studies on the efficacy of different methods of mould removal and prevention of (renewed) infestation is considerably smaller. While the possibilities for damage prevention which occupants or construction companies have are basically known, theoretical and practical assessment of their interaction and the legal situation remain the subject of great controversy. Hence, in spite of many official guidelines for health protection, the type and quality of mould removal services rendered by professional companies can vary greatly, and quality assurance regarding determination, assessment and sanitation of mould damage need to be optimised and implemented further. Moreover, there are considerable differences between the various national guidelines for mould removal and prevention. Likewise, mould damage prevention guidelines for construction can vary greatly from one country to another, and not only due to differences in climate.

In view of the considerable deficits in research and application as well as the complexity of the damage caused by mould and dampness, further interdisciplinary research is needed to close the gaps. Directed and coordinated research is essential to cross-link existing knowledge in the various fields and systematically develop it further. These fields include epidemiology and environmental medicine; toxicology and allergology; mycology and microbiology; the biology and physics of construction; architecture and construction planning; preservation and sanitation of buildings; as well as professional technique and laboratory methods. Last but not least, we have the vital task of further implementing the available data on prevention of damage caused by dampness and mould; e.g., isolating buildings properly, making them more energy-efficient and using environmentally sound ventilation technology.

The challenge for public health lies in developing and implementing preventive measures, which are specific for different groups of occupants (social status, increased susceptibility, age, etc.) and integrate both behaviour prevention and settings-oriented factors.

Prof. Dr. Claudia Hornberg
Marle Kopf
School of Public Health, University of Bielefeld, Germany
Network Mould Counselling Baden-Württemberg

During the last 10 years, basic conditions for an appropriate action in case of mould in indoor environments have improved considerably in Germany. Criteria to assess the hygienic impact of mould-related damage as well as validated methods to detect mould have been established, an external system for quality assurance has been set up and guidelines for mould remediation have been developed. Nevertheless, the appearance of mould in indoor environments often leads to mutual blame allocation ending in a judicial dispute, and the discussion frequently becomes unobjective. To leave this dispute as a winner, arguments are used which are little or not concerned with the present damage. Questions of tenancy law or health are linked to the problem of appropriate abolishment of the present mould in indoor environments. Many service providers put upon of the insecurity of persons who are affected by mould in indoor environments by offering them services, which are not appropriate and too expensive. Therefore criteria to assess the reliability of service providers are needed. In Baden-Württemberg, a federal state in the southwest of Germany, representatives of tenant and landlord organisations, remediation companies, diagnosticians for interior spaces and the public health service have affiliated to a “Network Mould Counselling”. Their intention is to contribute to the objectification of the mould problem. This network has released a publication on the following topics:

- Necessary activities in case of mould in indoor environments
- Competent assessment of mould in indoor environments
- Microbiological investigation
- Mould remediation
- Advice on health topics
- Advice on questions concerning law and insurance law
- Prevention of mould in indoor environments
- Literature and useful addresses

The document “Netzwerk Schimmelpilzberatung Baden-Württemberg”, that describes this network in more detail can be downloaded from http://www.gesundheitsamt-bw.de/servlet/PB/menu/1232734/index.html?ROOT=1133583 (German only)
Literature

In this section we will provide a collection of recent housing and health publications from a variety of backgrounds. Literature that is published in German and French, respectively, is indicated with the German flag 🇩🇪 and the French flag 🇫🇷. If you have suggestions for interesting journals that we should screen for the literature collection, please let us know!

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Allergies and Respiratory Diseases

Rodent allergen in Los Angeles inner city homes of children with asthma.

Worldwide time trends for symptoms of rhinitis and conjunctivitis: Phase III of the International Study of Asthma and Allergies in Childhood.

Important questions in allergy: novel research areas.

Dog ownership and contact during childhood and later allergy development.

Cho SJ, Ramachandran G, Grengs J, Ryan AD, Eberly LE, Adgate JL.
Longitudinal evaluation of allergen and culturable fungal concentrations in inner-city households.

Cingi C, Cakli H, Miman O, Aytan F, Aycan O, Atambay M, Daldal N.
Correlation of environmental mite levels and the symptoms of allergic rhinitis regarding the efficacy of preventive education.

Diette GB, Hansel NN, Buckley TJ, Curtin-Brosnan J, Eggleston PA, Matsui EC, McCormack MC, Williams DL, Breyssse PN.
Home indoor pollutant exposures among inner-city children with and without asthma.
Eggleston PA.

Guedes HT, Souza LS.

Hagmolen of Ten Have W, van den Berg NJ, van der Palen J, van Aalderen WM, Bindels PJ.


Keskinoglu P, Cimrin D, Aksakoglu G.

Kolarik B, Naydenov K, Larsson M, Bornehaq CG, Sundell J.

Lannerö E, Wickman M, van Hage M, Bergström A, Pershagen G, Nordvall L.


Ly NP, Soto-Quirós ME, Avila L, Hunninghake GM, Raby BA, Laskey D, Sylvia JS, Celedón JC.

MacDonald C, Sternberg A, Hunter PR.
A systematic review and meta-analysis of interventions used to reduce exposure to house dust and their effect on the development and severity of asthma. Environ Health Perspect. 2007 Dec;115(12):1691-5.

Noonan CW, Ward TJ.

Oftedal B, Brunekreef B, Nystad W, Madsen C, Walker SE, Nafstad P.

Ogershok PR, Warner DJ, Hogan MB, Wilson NW.

Park JH, Cox-Gansser JM, Kreiss K, White SK, Rao CY.


Home Safety


Nachreiner NM, Findorff MJ, Wyman JF, McCarthy TC.
Circumstances and consequences of falls in community-dwelling older women.

Palmieri TL, Alderson TS, Ison D, O'Mara MS, Sharma R, Bubba A, Coombs E, Greenhalgh DG.
Pediatric soup scald burn injury: etiology and prevention.

Pariente A, Dartigues JF, Benichou J, Letenneur L, Moore N, Fourrier-Réglat A.
Benzodiazepines and injurious falls in community dwelling elders.

Peel NM, Bartlett HP, McClure RJ.
Healthy aging as an intervention to minimize injury from falls among older people.

Scheffer AC, Schuurmans MJ, van Dijk N, van der Hooft T, de Rooij SE.
Fear of falling: measurement strategy, prevalence, risk factors and consequences among older persons.

Wong WL, Masters R, Maxwell J, Abernethy B.
Reinvestment and Falls in Community-Dwelling Older Adults.
Neurorehabil Neural Repair. 2008 Mar 11.

Housing and Ageing Society

Ashby K, Ozanne-Smith J, Fox B.
Investigating the over-representation of older persons in do-it-yourself home maintenance injury and barriers to prevention.

Austin N, Devine A, Dick I, Prince R, Bruce D.
Fear of falling in older women: a longitudinal study of incidence, persistence, and predictors.

Bertera EM, Bertera RL.
Fear of falling and activity avoidance in a national sample of older adults in the United States.

Indoor particles affect vascular function in the aged: an air filtration-based intervention study.

The Evolution of Unintentional Injury Mortality Among Elderly in Europe.
J Aging Health 2008;20 159-182.

Fleming J, Matthews FE, Brayne C, Cc75c Study Collaboration CC.
Falls in advanced old age: recalled falls and prospective follow-up of over-90-year-olds in the Cambridge City over-75s Cohort study.

Gaßmann KG, Rupprecht R, Freiberger E; for the IZG Study Group.
Predictors for occasional and recurrent falls in community-dwelling older people.

Golant SM.
Low-income elderly homeowners in very old dwellings: the need for public policy debate.
Haak M, Fänge A, Horstmann V, Iwarsson S.  
Two dimensions of participation in very old age and their relations to home and neighborhood environments.  

Henderson EJ, Caplan GA.  
Home sweet home? Community care for older people in Australia.  

Jacobs JM, Cohen A, Hammerman-Rozenberg R, Azoulay D, Maaravi Y, Stessman J.  
Going Outdoors Daily Predicts Long-Term Functional and Health Benefits Among Ambulatory Older People.  

Jang SN, Cho SI, Oh SW, Lee ES, Baik HW.  
Time since falling and fear of falling among community-dwelling elderly.  

Lang IA, Llewellyn DJ, Langa KM, Wallace RB, Huppert FA, Melzer D.  
Neighborhood deprivation, individual socioeconomic status, and cognitive function in older people: analyses from the English Longitudinal Study of Ageing.  

Mira Ahn, Julia O. Beamish, and Rosemary Carruci Goss.  
Understanding Older Adults’ Attitudes and Adoption of Residential Technologies.  

Morris JN, Wilkinson P, Dangour AD, Deeming C, Fletcher A.  
Defining a minimum income for healthy living (MIHL): older age, England.  

Nachreiner NM, Findorff MJ, Wyman JF, McCarthy TC.  
Circumstances and consequences of falls in community-dwelling older women.  

Nihtilä E, Martikainen P.  
Why older people living with a spouse are less likely to be institutionalized: The role of socioeconomic factors and health characteristics.  

Pariente A, Dartigues JF, Benichou J, Letenneur L, Moore N, Fourrier-Réglat A.  
Benzodiazepines and injurious falls in community dwelling elders.  

Peel NM, Bartlett HP, McClure RJ.  
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Wong WL, Masters R, Maxwell J, Abernethy B.  
Reinvestment and Falls in Community-Dwelling Older Adults.  
Neurorehabil Neural Repair. 2008 Mar 11.
Housing and Mental Health

**Anne Skevik Grødem.**
Household Poverty and Deprivation Among Children: How strong are the links? Childhood 2008;15 107-125.

**Grigg M, Judd F, Komiti A, Ryan L.**

**Johnson R.**

**Kessler RC, Galea S, Gruber MJ, Sampson NA, Ursano RJ, Wessely S.**

**Kyle T, Dunn JR.**

**Ly NP, Soto-Quirós ME, Avila L, Hunninghake GM, Raby BA, Laskey D, Sylvia JS, Celedón JC.**

**Meltzer H, Vostanis P, Goodman R, Ford T.**


**Vigil JM, Geary DC.**

Housing Conditions / Built Environment

**Bullen C, Kearns RA, Clinton J, Laing P, Mahoney F, McDuff I.**

**Burton A.**


**Digenis-Bury EC, Brooks DR, Chen L, Ostrem M, Horsburgh CR.**


**Ho PS, Kroll T, Kehn M, Anderson P, Pearson KM.**

**Øyvind Næss, Bjørgulf Claussen, and George Davey Smith.**

**Indoor Air**

**Allermann L, Pejtersen J, Gunnarsen L, Poulsen OM.**

**Antovic N, Vukotic P, Zekic R, Ilic R.**


**Chau CK, Hui WK, Tse MS.**

**Crist KC, Liu B, Kim M, Deshpande SR, John K.**

**Cienciewicki J, Jaspers I.**

**Corsi RL, Siegel JA, Chiang C.**


**Cukor J, Restuccia M.**

**Dixon S, Wilson J, Galke W.**

**Etzel RA.**

**Franklin PJ.**
[Air quality in schools - classroom levels of carbon dioxide (CO2), volatile organic compounds (VOC), aldehydes, endotoxins and cat allergen]  

Kemski J, Klingel R, Siehl A, Valdivia-Manchego M.  
From radon hazard to risk prediction-based on geological maps, soil gas and indoor measurements in Germany.  
Environmental Geology 2008

Marie-Ève Héroux, Denis Gauvin, Nicolas L. Gilbert, Mireille Guay, Geneviève Dupuis, Michel Legris, and Benoît Lévesque.  
Housing Characteristics and Indoor Concentrations of Selected Volatile Organic Compounds (VOCs) in Quebec City, Canada.  
Indoor and Built Environment 2008;17 128-137.

Ilacqua V, Hänninen O, Kuenzli N, Jantunen MF.  
Intake fraction distributions for indoor VOC sources in five European cities.  

Lifestyle-related factors and environmental agents causing cancer: an overview.  

Johannesson S, Gustafson P, Molnár P, Barregard L, Sällsten G.  
Exposure to fine particles (PM2.5 and PM1) and black smoke in the general population: personal, indoor, and outdoor levels.  

Pesticide loadings of select organophosphate and pyrethroid pesticides in urban public housing.  

Niu J, Tung TC.  
On-site quantification of re-entry ratio of ventilation exhausts in multi-family residential buildings and implications.  

Madanat H, Barnes MD, Cole EC.  
Knowledge of the effects of indoor air quality on health among women in Jordan.  

McCormack MC, Breyssse PN, Hansel NN, Matsui EC, Tonorezos ES, Curtin-Brosnan J, Williams DL, Buckley TJ, Eggleston PA, Diette GB.  
Common household activities are associated with elevated particulate matter concentrations in bedrooms of inner-city Baltimore pre-school children.  

Household exposure to pesticides and risk of childhood hematopoietic malignancies: The ESCALE study (SFCE).  
Environ Health Perspect. 2007 Dec;115(12):1787-93.

How can we measure the impact of pollutants on respiratory function in very young children? Methodological aspects.  
Turner A, Ip KH. 
Bioaccessibility of metals in dust from the indoor environment: application of a physiologically based extraction test. 

Vergleichswerte für flüchtige organische Verbindungen (VOC und Aldehyde) in der Innenraumluft von Haushalten in Deutschland. 
Ergebnisse des repräsentativen Kinder-Umwelt-Surveys (KUS) des Umweltbundesamtes. 

Mould and Dampness

Aydogdu H, Asan A. 
Airborne fungi in child day care centers in Edirne City, Turkey. 

Buzina W. 
Health effects of indoor molds. 

Cho SJ, Ramachandran G, Grengs J, Ryan AD, Eberly LE, Adgate JL. 
Longitudinal evaluation of allergen and culturable fungal concentrations in inner-city households. 

Cornick SM, Kumaran MK. 
A Comparison of Empirical Indoor Relative Humidity Models with Measured Data. 

Horner WE, Barnes C, Codina R, Levetin E. 
Guide for interpreting reports from inspections/investigations of indoor mold. 

Etzel RA. 
Indoor and outdoor air pollution: tobacco smoke, moulds and diseases in infants and children. 

Hagmolen of Ten Have W, van den Berg NJ, van der Palen J, van Aalderen WM, Bindels PJ. 
Residential exposure to mould and dampness is associated with adverse respiratory health. 

Menetrez MY, Foarde KK, Webber TD, Dean TR, Betancourt DA. 
Testing antimicrobial paint efficacy on gypsum wallboard contaminated with Stachybotrys chartarum. 

Menetrez MY, Foarde KK, Webber TD, Dean TR, Betancourt DA. 
Testing antimicrobial cleaner efficacy on gypsum wallboard contaminated with Stachybotrys chartarum. 

Park JH, Cox-Ganser JM, Kreiss K, White SK, Rao CY. 
Hydrophilic fungi and ergosterol associated with respiratory illness in a water-damaged building. 

Rabito FA, Iqbal S, Kiernan MP, Holt E, Chew GL. 
Children's respiratory health and mold levels in New Orleans after Katrina: A preliminary look. 

Resident cleanup activities, characteristics of flood-damaged homes and airborne microbial concentrations in New Orleans, Louisiana, October 2005. 
Mould-specific immunoglobulin antibodies quantified by flow cytometry reflect mould exposure in Norwegian children.

Sahakian NM, White SK, Park JH, Cox-Ganser JM, Kreiss K.
Identification of mold and dampness-associated respiratory morbidity in 2 schools: comparison of questionnaire survey responses to national data.

Schleibinger H, Laussmann D, Bornehag CG, Eis D, Rueden H.
Microbial volatile organic compounds in the air of moldy and mold-free indoor environments.

Seo SC, Reponen T, Levin L, Borchelt T, Grinshpun SA.
Aerosolization of particulate (1-->3)-beta-D-glucan from moldy materials.

Simon-Nobbe B, Denk U, Pöll V, Rid R, Breitenbach M.
The spectrum of fungal allergy.

Sun Y, Sundell J, Zhang Y.
Validity of building characteristics and dorm dampness obtained in a self-administrated questionnaire.
Sci Total Environ. 2007 Nov 15;387(1-3):276-82.

Development of an Environmental Relative Moldiness index for US homes.

Higher Environmental Relative Moldiness Index (ERMI(sm)) values measured in Detroit homes of severely asthmatic children.

Noise

Astolfi A, Pellerey F.
Subjective and objective assessment of acoustical and overall environmental quality in secondary school classrooms.

Babisch W.
Road traffic noise and cardiovascular risk.

Eriksson C, Rosenlund M, Pershagen G, Hilding A, Ostenson CG, Bluhm G.
Aircraft noise and incidence of hypertension.

Acute effects of night-time noise exposure on blood pressure in populations living near airports.

Hypertension and Exposure to Noise near Airports - the HYENA study.
Ohrström E, Barregård L, Andersson E, Skånberg A, Svensson H, Angerheim P.
Annoyance due to single and combined sound exposure from railway and road traffic.

Yu L, Kang J.
Effects of social, demographical and behavioral factors on the sound level evaluation in urban open spaces.

Smoking / ETS

Does smoke-free Ireland have more smoking inside the home and less in pubs than the United Kingdom? Findings from the international tobacco control policy evaluation project.

Exposure to environmental tobacco smoke in German restaurants, pubs and discotheques.

Etzel RA.

Guedes HT, Souza LS.
Exposure to maternal smoking in the first year of life interferes in breast-feeding protective effect against the onset of respiratory allergy from birth to 5 yr.

Keskinoglu P, Cimrin D, Aksakoglu G.
The impact of passive smoking on the development of lower respiratory tract infections in children.

Lannerö E, Wickman M, van Hage M, Bergström A, Pershagen G, Nordvall L.
Exposure to environmental tobacco smoke and sensitisation in children.

Markowitz S.
The effectiveness of cigarette regulations in reducing cases of Sudden Infant Death Syndrome.

Messer K, Trinidad DR, Al-Delaimy WK, Pierce JP.
Smoking cessation rates in the United States: a comparison of young adult and older smokers.

Noonan CW, Ward TJ.
Environmental tobacco smoke, woodstove heating and risk of asthma symptoms.

Parental smoking behaviour and effects of tobacco smoke on children's health in Finland and Russia.
Thermal Comfort / Energy

Diana Ürge-Vorsatz, Aleksandra Novikova.
Potentials and costs of carbon dioxide mitigation in the world's buildings.

Horne R, Hayles C.
Towards global benchmarking for sustainable homes: an international comparison of the energy performance of housing.

Pieter de Wilde, Yaqub Rafiq, and Martin Beck.
Uncertainties in predicting the impact of climate change on thermal performance of domestic buildings in the UK.

Smargiassi A, Fournier M, Griot C, Baudouin Y, Kosatsky T.
Prediction of the indoor temperatures of an urban area with an in-time regression mapping approach.

Urban Planning

Andersen HS.
Why do residents want to leave deprived neighbourhoods? The importance of residents' subjective evaluations of their neighbourhood and its reputation.

Carver A, Timperio A, Crawford D.
Playing it safe: the influence of neighbourhood safety on children's physical activity. A review.

Cozens P.
Public health and the potential benefits of Crime Prevention Through Environmental Design.

Can the impact on health of a government policy designed to create more liveable neighbourhoods be evaluated? An overview of the RESIDential Environment Project.

Evaluation of the implementation of a state government community design policy aimed at increasing local walking: Design issues and baseline results from RESIDE, Perth Western Australia.

Heinrich KM, Lee RE, Regan GR, Reese-Smith JY, Howard HH, Haddock CK, Poston WS, Ahluwalia JS.
How does the built environment relate to body mass index and obesity prevalence among public housing residents?

Joshu CE, Boehmer TK, Brownson RC, Ewing R.
Personal, neighbourhood and urban factors associated with obesity in the United States.

Kósa K, Molnár A, McKee M, Adány R.
Rapid health impact appraisal of eviction versus a housing project in a colony-dwelling Roma community.
Lovasi GS, Moudon AV, Pearson AL, Hurvitz PM, Larson EB, Siscovick DS, Berke EM, Lumley T, Psaty BM.
Using built environment characteristics to predict walking for exercise.

Marlon G. Boarnet, Michael Greenwald, and Tracy E. McMillan.

Nielsen TS, Hansen KB.
Do green areas affect health? Results from a Danish survey on the use of green areas and health indicators.

Rogers A, Huxley P, Evans S, Gately C.
More than jobs and houses: mental health, quality of life and the perceptions of locality in an area undergoing urban regeneration.

Schmidt CW.
Bringing green homes within reach: healthier housing for more people.

Smargiassi A, Fournier M, Griot C, Baudouin Y, Kosatsky T.
Prediction of the indoor temperatures of an urban area with an in-time regression mapping approach.

Pathways to obesity: identifying local, modifiable determinants of physical activity and diet.

Sugiyama T, Leslie E, Giles-Corti B, Owen N.
Associations of neighbourhood greenness with physical and mental health: do walking, social coher-
ence and local social interaction explain the relationships?

Sutherland E, Carlisle R.
Healthy by Design: an innovative planning tool for the development of safe, accessible and attractive en-
vironments.

Wood L, Shannon T, Bulsara M, Pikora T, McCormack G, Giles-Corti B.
The anatomy of the safe and social suburb: an exploratory study of the built environment, social capital and residents’ perceptions of safety.

Other Topics
Böse-O'Reilly S, Heudorf U, Lob-Corzilius T, von Mühlendahl KE, Otto M, Schmidt S.
Children's environment in Central Europe: threats and chances.

Centers for Disease Control and Prevention (CDC) Advisory Committee on Childhood Lead Poisoning Prevention.
Interpreting and managing blood lead levels < 10 microg/dL in children and reducing childhood exposures to lead: recommendations of CDC's Advisory Committee on Childhood Lead Poisoning Prevention.
Edvardsson B, Stenberg B, Bergdahl J, Eriksson N, Lindén G, Widman L.
Medical and social prognoses of non-specific building-related symptoms (Sick Building Syndrome): a follow-up study of patients previously referred to hospital.

Has the impact of heat waves on mortality changed in France since the European heat wave of summer 2003? A study of the 2006 heat wave.

Inagami S, Cohen DA, Finch BK.
Non-residential neighborhood exposures suppress neighborhood effects on self-rated health.

Kirkpatrick SI, Tarasuk V.
Adequacy of food spending is related to housing expenditures among lower-income Canadian households.

Laaksonen M, Martikainen P, Nihtilä E, Rahkonen O, Lahelma E.
Home ownership and mortality: a register-based follow-up study of 300,000 Finns.

Do socioeconomic characteristics of neighbourhood of residence independently influence incidence of coronary heart disease and all-cause mortality in older British men?

Prüss-Ustün A, Bonjour S, Corvalán C.
The impact of the environment on health by country: a meta-synthesis.

Rappazzo K, Cummings CE, Himmelsbach RM, Tobin R.
The effect of housing compliance status on children's blood lead levels.

Schmid G, Lager D, Preiner P, Uberbacher R, Cecil S.
Exposure caused by wireless technologies used for short-range indoor communication in homes and offices.

Housing and HIV/AIDS
AIDS and Behavior
Supplement 2 / November 2007

World Health Organization
WHO Multi-country Study on Women's Health and Domestic Violence against Women. Initial results on prevalence, health outcomes and women's responses.
Event Announcements

In this section we will inform you about upcoming events with relevance to housing and health. If you know of any international event, please let us know!

Built and Human Environment, 8th International Postgraduate Research Conference
Date: June 26 - 27, 2008
Venue: Prague, Czech Republic
Further Information: http://www.ipgrc.buhu.salford.ac.uk/Whole.htm

Benefits and Risks of Inhaled Engineered Nanoparticles
Date: June 11 - 14, 2008
Venue: Hannover, Germany
Further Information: http://www.inis-symposium.com/

The 4th IET International Conference on Intelligent Environments (IE 08)
Date: July 21 - 22, 2008
Venue: University of Washington, Seattle, USA
Further Information: http://conferences.theiet.org/ie08/

The 11th International Conference on Indoor Air Quality and Climate
Date: August 17 - 22, 2008
Venue: Copenhagen, Denmark
Further Information: http://www.indoorair2008.org/

XXXVI IAHS World Congress on Housing Science
Date: November 3 - 7, 2008
Venue: Kolkata, India

53. gmds-Jahrestagung
Date: September 15 - 19, 2008
Venue: Stuttgart, Germany
Further Information: http://www.gmds2008.de/

2. Jahrestagung Gesellschaft für Hygiene, Umweltmedizin und Präventivmedizin (GHUP)
Date: October 1 - 4, 2008
Venue: Graz, Austria
Further Information: http://conventus.de/ghup2008/

20th Conference of the International Society for Environmental Epidemiology
Date: October 12 - 16, 2008
Venue: Pasadena, California, USA
Further Information: http://secure.awma.org/events/isee-isea/

16th European Conference on Public Health
Date: November 6 - 8, 2008
Venue: Lisbon, Portugal
**Message Board**

In this section we will inform you about activities and projects related to housing and health that are being carried out by WHO or the WHO-CC. This may relate to ongoing activities and projects, as well as invitations to participate in data collections or case study projects.

**WHO work on dampness and mould**

Dampness and mould in indoor environments are recognized as a significant health hazard related to a wide range of health effects. Still, the practical implementation of actions to reduce, mitigate or prevent dampness and mould remains a difficult area for public health caused by the diversification of indoor spaces, the fragmentation of responsibilities and, in case of homes, the limited mandate of public authorities for interventions.

WHO actions in the field of dampness and mould in built settings are now a main part of the working agenda of the WHO European Center for Environment and Health in Bonn. A first task is the development of WHO Indoor Air Quality Guidelines for Dampness, Mould and Ventilation, which have been discussed and suggested by an expert meeting of scientists in October 2007. The suggested recommendations are part of the meeting report (http://www.euro.who.int/Document/E91146.pdf). The suggested guidelines are currently being reviewed and the associated evidence background is summarized for publication of the guidelines in mid-2008.

The WHO Guidelines on Dampness, Mould and Ventilation are being developed as a part of a larger project on WHO Indoor Air Quality Guidelines which will also address allergens, selected chemical pollutants and indoor combustion in the near future. For further information on the IAQ Guidelines, a meeting report on the development of such guidelines is available at http://www.euro.who.int/air/activities/20070510_2.

Next to the development of guidelines, WHO has addressed risk management activities for dampness and mould prevention and remediation through a project to identify and assess interventions undertaken to reduce, mitigate or prevent dampness and mould in built environments. 21 case studies from developed countries with modern building stocks were collected to review and assess the practical actions and interventions undertaken to address or prevent health-relevant problems of dampness and mould. The main conclusions of an expert review committee are that there is a lack of knowledge on the quality and success of practical mitigation strategies, and that there is yet little accumulated evidence on health benefits of actions carried out in the built environment.

Key conclusions were derived from the discussion of those case studies and illustrate good practice elements and approaches from

- a scientific perspective (is there scientific evidence on successful interventions against dampness and mould?)
- a technical perspective (what interventions and actions are suitable to reduce or prevent dampness and mould?) and
- a process-related perspective (which actors have what responsibilities and what processes have been proven as effective?)

The meeting report as well as the case studies discussed will be available for download on http://www.euro.who.int/Housing/activities/20071218_1 in mid-May, and will be – together with additional evidence on national approaches, policy relevance and existing regulations – a background document for an upcoming WHO expert meeting on the policy implication on interventions against dampness and mould in early 2009.

Next to these projects directly focused at the health relevance of indoor dampness and mould, a variety of other WHO activities deal with healthy indoor environments and specifically the indoor air quality problems in relation to health, among these for example the initiative of
WHO Headquarter (Geneva) to assess and quantify the burden of disease of indoor air pollution and specifically the use of solid fuels on national levels (see http://www.who.int/indoorair/publications/indoor_air_national_burden_estimate_revised.pdf) or the assessment of the national health impacts from the three major global environmental risk factors 'unsafe water, sanitation & hygiene', 'indoor air pollution from solid fuel use' and 'outdoor air pollution' (http://www.who.int/quantifying_ehimpacts/countryprofiles/en/index.html), which largely relate to the indoor setting.

With such activities, WHO increasingly considered the relevance of indoor spaces as a health determinant. The WHO Collaborating Centre for Housing and Health has in similar ways addressed the indoor conditions of buildings, and carried out a variety of activities on mould and indoor environments, for example:

- Implementation of interlaboratory comparisons on the topics „Differentiation of Mould in Indoor Environments and in Food“ and „Drawing of Germ Samples in the Air“
- Continuing education courses on evidence and differentiation of mould and on evidence and assessment of biological exposure in indoor environments
- Continuing education courses on mould remediation for craftsmen
- Implementation of the research project “Investigation on the Appearance and Health Impact of Bacteria in Indoor Environments”
- Release of the publications “Network Mould Counselling Baden-Württemberg” (see page 2) and “Mould in Indoor Environments - Differentiation and Assessment” (both in German)

In addition, the WHO-CC is involved in an environmental health surveillance system on fourth-graders conducted by sentinel county health offices in Baden-Württemberg with a set of questions targeted at the housing environment of these children.