Editorial

Newsletter „Housing and Health“ – new information about an old problem

Is there a need for a newsletter with information about housing and health problems despite the information flood of all thinkable topics in the internet? We – the working team of the WHO Collaborating Centre for Housing and Health at the Baden-Württemberg State Health Office in Stuttgart/Germany – do think so. Why? Even in a flood you are dependent on a firm point, where you can be saved from drowning. And we hope, that from our experience we can deliver the suitable information for a solid position in the discussion about housing and health. The newsletter will therefore provide a broad and interdisciplinary collection of recent articles on housing and health issues to keep you updated.

During the last months, the challenge of global warming has been coming on the political agenda. As a lot of health problems are associated with climate change, measures for CO₂-reduction are absolutely necessary. One method to save CO₂ is heating with renewable materials like wood or wood pellets. Consequently, wood burning is designated as a recommendation for heating systems in new houses in Baden-Württemberg. But the particulate matter emissions of wood burning are more than a magnitude higher when compared with oil burning. So, if the particle emissions of wood burning were not severely restricted by new technical solutions, the substitution of oil by wood could yield a clear increase of particulate matter in the air with possible negative health consequences for the residents.

Another method of energy saving in homes is better insulation and a reduction of heat loss due to air exchange. But this can result in higher indoor humidity levels and can cause mould growth. In regions with high radon concentrations in the ground, a very tight coating of dwellings can also increase the concentration of indoor radon, especially in connection with the use of geothermal energy.

These examples show that an uncritical consumption of energy saving measures can impair the health situation in buildings. A comprehensive technology assessment of the different measures is therefore essential. In this process, scientist and experts from different subject areas of housing and health have to work together and exchange information.

With our newsletter, we will contribute to this interdisciplinary collaboration. The main part of the newsletter will be an up-to-date collection of relevant housing and health literature for people interested in housing-related topics such as hygiene, public health, architecture, urban planning, or building physics. In addition, we will show you an overview of upcoming housing and health events (conferences, meetings etc.) and other relevant information and announcements, and provide a forum for invited contributions on specific housing and health topics. In doing so, we hope to extend the perception of housing and health issues, and establish an interdisciplinary exchange of information between working fields related to housing and health.

We do anticipate to issue this newsletter 3-4 times per year, and truly hope that it will find your interest and inform your work. Please do not hesitate to contact us if you have any suggestion on how to improve this newsletter and make it relevant for you.

By: Dr. Bernhard Link,
Leader of the WHO-CC for Housing and Health
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 is indicated with the German flag 🇩🇪. If you have suggestions for interesting journals that we should screen for the literature collection, please let us know!

Allergies and Respiratory Diseases

Domestic cat allergen and allergic sensitisation in young children.

Frisk M, Magnuson A, Kiviloog J, Ivarsson AB, Kamwendo K.
Increased occurrence of respiratory symptoms is associated with indoor climate risk indicators - a cross-sectional study in a Swedish population.
Respir Med. 2007 Sep;101(9):2031-5.

Mendell MJ.
Indoor residential chemical emissions as risk factors for respiratory and allergic effects in children: a review.

Wu F, Takaro TK.
Childhood asthma and environmental interventions.

Reported prevalence and co-morbidity of asthma, chronic bronchitis and emphysema: a pan-European estimation.

Platts-Mills TA.
The role of indoor allergens in chronic allergic disease.

Bakke JV, Norback D, Wieslander G, Hollund BE, Moen BE.
Pet keeping and dampness in the dwelling: associations with airway infections, symptoms, and physiological signs from the ocular and nasal mucosa.

Sheikh A, Hurwitz B, Shehata Y.
House dust mite avoidance measures for perennial allergic rhinitis.

Exposure to Mites, Sensitisation and Allergy to Mites in Moisture Damaged Buildings.
Indoor and Built Environment 2007 16: 19-27.

Jeedychowski W, Mauger J, Zembala M, Perzanowski MS, Hajto B, Flak E, Mróz E, Jacek R, Sowa A, Perera FP.
Risk of wheezing associated with house-dust mite allergens and indoor air quality among three-year-old children. Kraków inner city study.

du Prel X, Krämer U, Behrendt H, Ring J, Oppermann H, Schikowski T, Ranft U.
Preschool children's health and its association with parental education and individual living conditions in East and West Germany.
Home Safety

Kendrick D, Barlow J, Hampshire A, Polnay L, Stewart-Brown S.

Stone KE, Eastman EM, Gielen AC, Squires B, Hicks G, Kaplin D, Serwint JR.

David Ormandy.
Home: haven or accident black spot? A review of the causes of home accidents.

Rhodes KV, Iwashyna TJ.
Child injury risks are close to home: parent psychosocial factors associated with child safety.
Matern Child Health J. 2007 May;11(3): 269-75.

Modification of the home environment for the reduction of injuries.

Housing and Ageing Society

Alley D, Liebig P, Pynoos J, Banerjee T, Choi IH.
Creating elder-friendly communities: preparations for an aging society.

Van Wezemael, Joris E.; Gilroy, Rose
The Significance of Demographic Change in the Swiss Approach to Private Rented Housing: A Potential for Ageing in Place?

The WHO has published a new guide on building age-friendly cities. The guide and a checklist in English and French as well as brochures in English, French, Spanish and Portuguese can be downloaded from http://www.who.int/ageing/age_friendly_cities/en/index.html

Housing and Mental Health

Shenassa ED, Daskalakis C, Liebhaber A, Braubach M, Brown M.
Dampness and mold in the home and depression: an examination of mold-related illness and perceived control of one's home as possible depression pathways.

Nelson G, Sylvestre J, Aubry T, George L, Trainor J.
Housing choice and control, housing quality, and control over professional support as contributors to the subjective quality of life and community adaptation of people with severe mental illness.

Housing Conditions / Built Environment

Shenassa ED, Frye M, Braubach M, Daskalakis C.
Routine stair climbing in place of residence and Body Mass Index: a pan-European population based study.


Indoor Air


Weichenthal, Scott, Dufresne, Andre, Infante-Rivard, Claire.  
Review: Indoor Nitrogen Dioxide and VOC Exposures: Summary of Evidence for an Association with Childhood Asthma and a Case for the Inclusion of Indoor Ultrafine Particle Measures in Future Studies.  
Indoor and Built Environment 2007 16: 387-399.

Diapouli, E., Chaloulakou, A., Spyrellis, N.  
Indoor and Outdoor Particulate Matter Concentrations at Schools in the Athens Area.  

Indoor air quality in homes of patients with chronic obstructive pulmonary disease.  
Am J Respir Crit Care Med. 2007 Sep 1;176(5): 465-72.

Weichenthal S, Dufresne A, Infante-Rivard C.  
Indoor ultrafine particles and childhood asthma: exploring a potential public health concern.  
Indoor Air. 2007 Apr;17(2): 81-91. Review.

Weichenthal S, Dufresne A, Infante-Rivard C, Joseph L.  
Indoor ultrafine particle exposures and home heating systems: a cross-sectional survey of Canadian homes during the winter months.  

Miller JD, Dugandzic R, Frescura AM, Salares V.  
Indoor- and outdoor-derived contaminants in urban and rural homes in Ottawa, Ontario, Canada.  

Yu, Huili, Zhang, Kaili, Rossi, Carole.  
Experimental Study of the Photocatalytic Degradation of Formaldehyde in Indoor Air using a Nanoparticulate Titanium Dioxide Photocatalyst.  
Indoor and Built Environment 2007 16: 529-537.

Simons E, Curtin-Brosnan J, Buckley T, Breyssse P, Eggleston PA.  
Indoor environmental differences between inner city and suburban homes of children with asthma.  


Bundesverband der Unfallkassen (Hrsg.).  
Laserdrucker - sicher betreiben.  
GUV-I 820, April 2007.

Mersch-Sundermann VH.  
Evaluierung möglicher Beziehungen zwischen Emissionen aus Büromaschinen, insbesondere aus Fotokopierern und Laserdruckern, und Gesundheitsbeeinträchtigungen bzw. Gesundheitsschäden bei exponierten Büroangestellten „Tonerstudie“.  

Mobile Phones  
Background: Since the year 2000 case-control studies with the same study design are being conducted in 13 countries with the grant of the International Agency for Research on Cancer (IARC). The results from Denmark, Finland, Norway, Sweden, Great Britain, Germany and France are published in the specified literature. Kan et al. enclosed nine case-control studies from US and Europe in their meta-analysis, six of these studies have been part of the Interphone study.
Mobile phone use and risk of glioma in 5 North European countries.
Int J Cancer. 2007 Apr 15;120(8): 1769-75.

Klaeboe L, Blaasaas KG, Tynes T.
Use of mobile phones in Norway and risk of intracranial tumours.
Eur J Cancer Prev. 2007 Apr;16(2): 158-64.

Environmental risk factors for sporadic acoustic neuroma (Interphone Study Group, Germany).

Hours M, Bernard M, Montestrucq L, Arslan M, Bergeret A, Deltour I, Cardis E.
Cell Phones and Risk of brain and acoustic nerve tumours: the French INTERPHONE case-control study.

Kan P, Simonsen S.E, Lyon JL, Kestle J.R.
Cellular phone use and brain tumor: a meta-analysis.

Mould and Dampness

Mudarri D, Fisk WJ.
Public health and economic impact of dampness and mold.

Pekkanen J, Hyvarinen A, Haverinen-Shaughnessy U, Korppi M, Putus T, Nevalainen A.
Moisture damage and childhood asthma: a population-based incident case-control study.

Kaisa Svennberg, Kristin Lengsfeld, Lars-Erik Harderup, and Andreas Holm.
Previous Experimental Studies and Field Measurements on Moisture Buffering by Indoor Surface Materials.
Journal of Building Physics, 1 2007; vol. 30: 261 - 274.

Effects on patients with asthma of eradicating visible indoor mould: a randomised controlled trial.
Thorax. 2007 Sep;62(9): 767-72.

Seltzer JM, Fedoruk MJ.
Health effects of mold in children.

Shenassa ED, Daskalakis C, Liebhaber A, Braubach M, Brown M.
Dampness and mold in the home and depression: an examination of mold-related illness and perceived control of one's home as possible depression pathways.

Robert Koch-Institut (Hrsg.).
Schimmelpilzbelastung in Innenräumen – Befunderhebung, gesundheitliche Bewertung und Maßnahmen.
Noise

**Miedema HM, Vos H.**
Associations between self-reported sleep disturbance and environmental noise based on reanalyses of pooled data from 24 studies.

**Pedersen E, Persson Wave K.**
Wind turbine noise, annoyance and self-reported health and well-being in different living environments.

**Niemann H, Bonnefoy X, Braubach M, Hecht K, Maschke C, Rodrigues C, Röbbel N.**
Noise-induced annoyance and morbidity results from the pan-European LARES study.

The European Commission has published the final results of four noise-related health impact research projects funded by the fifth Framework Programme of Research (FP5):

- **HYENA - Hypertension and Exposure to Noise near Airports**
- **NOISECHEM - Noise and Industrial Chemicals: Interaction Effects on Hearing and Balance**
- **NOPHER - Noise Pollution Health Effects Reduction**
- **RANCH - Road Traffic and Aircraft Noise Exposure and Children's Cognition and Health: Exposure-effect relationships and Combined Effects**

For more information please see the [DG Research](http://www.dg-research.eu) environment webpages.

Radon

Besides environmental tobacco smoke radon is considered the second important risk factor of lung cancer. Around 1900 fatalities in Germany and several 10000 fatalities worldwide are caused by this radioactive inert gas each year. A majority of these fatalities are preventable. With this background a workshop of the International Radon Project of the WHO was conducted in march 2007 at the Bundesamt für Strahlenschutz (Federal Office for Radiation Protection, BfS) in München, Germany. Within this project [http://www.who.int/ionizing_radiation/env/radon/en/](http://www.who.int/ionizing_radiation/env/radon/en/) health effects of radon indoors are monitored worldwide and strategies to reduce the resulting health risks are being developed.

The BfS has published a summary of the status quo in the article „Gesundheitliche Auswirkungen von Radon in Wohnungen“ (Health Effects by radon in homes) which can be downloaded from [http://www.bfs.de/de/ion/wirkungen/radon_ges.html](http://www.bfs.de/de/ion/wirkungen/radon_ges.html). Besides further information about radon [http://www.bfs.de/en/ion/radon](http://www.bfs.de/en/ion/radon) (English) or [http://www.bfs.de/de/ion/radon](http://www.bfs.de/de/ion/radon) the updated brochure “Radon in Häusern” (radon in homes) can be downloaded from [http://www.bfs.de/de/bfs/druck/strahlenthemen/STTH_Radon.html](http://www.bfs.de/de/bfs/druck/strahlenthemen/STTH_Radon.html).


**EU- radiation protection conference 2007**

In June 2007 the **EU-** radiation protection conference took place in Berlin, Germany. Amongst others new findings about the effects of radiation on man have been discussed, including the topic radon and lung cancer. The program and the presentations of the conference can be downloaded from [http://www.bfs.de/en/ion/papiere/Eu_konferenz.html](http://www.bfs.de/en/ion/papiere/Eu_konferenz.html).

Epidemiological studies on radon indoors and measurement of dose have recently been discussed at a meeting of the European Network Alpha-Risk on September 27 - 28 [http://www.alpha-risk.org/cps/sections/publicevent/joint_alpha_risk_gene/view](http://www.alpha-risk.org/cps/sections/publicevent/joint_alpha_risk_gene/view).

**Coskeran T, Denman A, Phillips P, Tornberg R.**
The cost-effectiveness of radon-proof membranes in new homes: a case study from Brixworth, Northamptonshire, UK.
Health Policy. 2007 May;81(2-3):195-206.

**Smoking / ETS**

**Phillips R, Amos A, Ritchie D, Cunningham-Burley S, Martin C.**
Smoking in the home after the smoke-free legislation in Scotland: qualitative study.
BMJ. 2007 Sep 15;335(7619): 553.

**Thermal Comfort / Energy**

Energy, energy efficiency, and the built environment.

**De Sherbinin Alex, Schiller Andrew, and Pulsipher Alex.**
The vulnerability of global cities to climate hazards.

**Rosenthal JK, Sclar ED, Kinney PL, Knowlton K, Crauderueff R, Brandt-Rauf PW.**
Links between the Built Environment, Climate and Population Health: Interdisciplinary Environmental Change Research in New York City.

Effect of insulating existing houses on health inequality: cluster randomised study in the community.
BMJ. 2007 Mar 3;334(7591): 460.

**Nakova K.**
Energy Efficiency Networks in Eastern Europe and Capacity Building for Urban Sustainability: The Experience of Two Municipal Networks.

**Shortt N, Rugkása J.**
"The walls were so damp and cold" fuel poverty and ill health in Northern Ireland: results from a housing intervention.

**Mäkinen TM.**
Human cold exposure, adaptation, and performance in high latitude environments.

**Hansen D, Hilgenhöner M, Benner D, Popp W.**
Influence of air cooling units on air quality - A pilot project.
**Griet Verbeeck and Hugo Hens**
Life Cycle Optimization of Extremely Low Energy Dwellings
Journal of Building Physics, 10 2007; vol. 31: 143 - 177.

August 2003 heat wave in France: risk factors for death of elderly people living at home.

**Urban Planning**

**Vlahov D, Freudenberg N, Projetti F, Ompad D, Quinn A, Nandi V, Galea S.**
Urban as a determinant of health.
J Urban Health. 2007 May;84(3 Suppl): i16-26.

**Kochtitzky CS, Frumkin H, Rodriguez R, Dannenberg AL, Rayman J, Rose K, Gillig R, Kanter T; Centers for Disease Control and Prevention.**
Urban planning and public health at CDC.

**Edmundas Kazimieras Zavadskas, Arturas Kaklauskas, Jurate Kaklauskienė.**
Modelling and forecasting of a rational and sustainable development of Vilnius: emphasis on pollution.

**Pranciskus Juskevicius, Marija Burinskiene.**
Quality factors of the residential environment in urban planning.

**Other Topics**

German Environmental Survey for Children (GerES IV) - First results.

**Harrison RA, Gemmell I, Heller RF.**
The population effect of crime and neighbourhood on physical activity: an analysis of 15,461 adults.

**Kawachi I, Subramanian SV.**
Neighbourhood influences on health.

**Xavier Bonnefoy, Matthias Braubach, Maggie Davidson, Nathalie Robbel.**
A pan-European housing and health survey: description and evaluation of methods and approaches.

**Jacobs DE, Kelly T, Sobolewski J.**
Linking public health, housing, and indoor environmental policy: successes and challenges at local and federal agencies in the United States.

Gesundheits-Monitoring-Einheiten (GME) in Bayern [Health monitoring units in Bavaria. Concept, aims and thematic focus of the first survey on children's environment and health].

A recent publication of CETIM (Europe-Third World Centre) provides an interesting overview of the right to housing on a global scale, and reviews the commitments by international conventions and national constitutions. Details can be found at: [http://www.cetim.ch/en/publications_logement.php](http://www.cetim.ch/en/publications_logement.php)
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!

National Home Injury Prevention Congress 2007
Date: November 12 - 13, 2007
Venue: Cheltenham UK
Further Information: http://www.rospa.com/home/index.htm

1. Jahrestagung GHUP (Gesellschaft für Hygiene, Umweltmedizin und Präventivmedizin)
Date: November 22 - 24, 2007
Venue: Bielefeld, Germany
Further Information: http://www.med.uni-giessen.de/ghup/index.html

2007 Regional Conferences on Sustainable Building and Construction
Date: December 4 - 5, 2007
Venue: Hong Kong, China
Further Information: http://www.hkpgbc.org/sb07/

7th Annual New Partners for Smart Growth conference
Date: February 7 - 9, 2008
Venue: Washington DC, USA
Further Information: http://www.newpartners.org/index.html

2008 RESNET Building Performance Conference
Date: February 18 - 20, 2008
Venue: San Diego, CA, USA
Further Information: http://www.natresnet.org/conference/2008/theme.htm

5th Warwick Healthy Housing Conference 2008
Date: March 17 - 19, 2008
Venue: Coventry, United Kingdom
Further Information: http://www2.warwick.ac.uk/fac/soc/law/research/centres/shhru/healthyhousing/

Light & Building
Date: April 6 - 11, 2008
Venue: Frankfurt / Main, Germany

7th International Conference on Performance-Based Codes and Fire Safety Design Methods
Date: April 16 - 18, 2008
Venue: Auckland, New Zealand
Further Information: http://www.cibworld.nl/website/newsletter/0707/sfpe_brochure.pdf

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

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

The implementation and evaluation of actions to prevent, remove or reduce damp and mould in built environments is a difficult area for public health. To review practical interventions and their effectiveness to reduce exposure to damp and mould, the WHO Housing and Health programme is currently looking for case studies and interventions in this field. Selected interventions will be discussed at a WHO expert meeting. Main outcomes will be a list of European best practice examples as well as policy briefs on sound technical action against damp and mould.

If you are interested to contribute case studies or technical actions to this project, please contact Matthias Braubach at the WHO Bonn office (email: mbr@ecehbonn.euro.who.int)

Miscellaneous

In July 2007 the district council of Freiburg, a city in the southwest of Germany, made the decision to consider the Blue angel, an environmental level for products, as an important criterion for the allocation of public funds for restoration, new buildings or extensions of public buildings.

The United Nations has designated the first Monday in October every year as World Habitat Day to reflect on the state of human settlements and the basic right to adequate shelter for all. This year, the World Habitat Day was held under the motto “A safe city is a just city”. Information can be found at: http://www.unhabitat.org/categories.asp?catid=534

Speaker’s corner

In this section we will publish invited contributions from experts within the housing and health field, aiming at a specific topic and reflecting about the current evidence and its policy implications.

A house is not a home

Housing and health is a difficult and diverse working field that covers a variety of well-established environmental health risk factors. Indoor air pollution, radon, asbestos, lead, noise, injury risks, pests, mould and allergens, electromagnetic fields, cold and heat, lack of hygiene and sanitation – almost all known environmental threats relate to one’s home. Considering the amount of time spent in the home, especially by so-called vulnerable groups, one should expect housing to be one of the main settings for health promotion and prevention campaigns. But is it? Is it as recognized as other setting approaches, such as the Healthy Cities, Healthy Schools, Healthy Hospitals? Is it as much considered as occupational health actions targeting the individual at the workplace and offering tailored health services?

No, it is not. Housing and health is – to a large extent – fragmented. Even more, it often reminds of a “no man`s land” – who claims to be a housing and health researcher? How many universities or environmental institutions do have a housing and health programme? Despite the huge amount of work done in disciplines that clearly relate to the private home, there is a lack of interaction and communication between the actors. The existing evidence tends to be disseminated in scientific journals bringing together the group of researchers working in the same field. Therefore, journals may focus on indoor air issues, on noise, and architectural design, on radiation or other risk factors, as well as they may relate to very specific diseases and health impacts (allergies, obesity, etc.).
The direct consequence of this fragmentation is that there has never emerged an independent discipline of housing and health. Today, housing and health work is done by a large variety of actors, but it is not recognized as such – neither by those working with it, nor by the public, the media, or policymakers.

A house is not a home. What is true for the resident, is also true for the science. We work on the same concept of built environment and indoor settings, but do we feel home in this setting? Do we acknowledge what it means to work within a setting? Do we acknowledge that for a person living in a dwelling, it does not make sense to separate the exposure to formaldehyde from the exposure to noise?

Scientifically, of course it makes sense to look into these aspects separately and carry out detailed risk assessments. But then, we need to merge the results, and adapt to the reality of housing and health, which is characterized by simultaneous exposure to many risk factors.

It is about time to bring together the evidence that exists within different groups and networks. But even more, it is about time to bring together the actors themselves, and found a common family under the roof of housing and health. Each discipline residing under this roof represents a column on which this roof is rested, and each discipline will of course need to maintain its characteristics and specificities. Still, there is an added value of a common identity, of a common idea that the work relates to the overall concept of housing and health and shall be not only discussed separately, but also in relation to the relevance for the resident and in combination with all other housing aspects.

Therefore, it is about time to make the house a home, and to come together as a family within the unique structure that the concept of housing and health offers to all its residents.

Move in, make yourself comfortable, and have a chat with your new family members. They have a lot to tell you…

By: Matthias Braubach, Technical Officer Housing and Health, WHO ECEH Bonn office.